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كلية الدراسات العليا

التاريـــخ: ٢٩ / ١٢ / ٢٠١١

نموذج رقم (١٨)
اقرار والتزام بقوانين الجامعة الأردنية وأنظمتها وتعليماتها لطلبة الماجستير

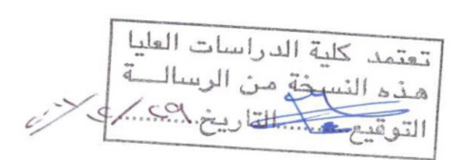
أنا الطالب: نوف عبد المعطي صالح العنزي الرقم الجامعي: ٨٠٩٠٥٢٩
التخصص: ماجستير صيدلة سريرية الكلية: الصيدلة

اعلن بأنني قد التزمت بقوانين الجامعة الأردنية وأنظمتها وتعليماتها وقراراتها السارية المفعول المتعلقة باعداد رسائل الماجستير والدكتوراة عندما قمت شخصيا" باعداد رسالتي / اطروحتي بعنوان: ....

Evaluation of outpatients pharmacies' counseling behavior and content in Jordan University Hospital (JUH).

وذلك بما ينسجم مع الأمانة العلمية المتعارف عليها في كتابة الرسائل والأطاريح العلمية. كما أنني أعلن بأن رسالتي /اطروحتي هذه غير منقولة أو مستلة من رسائل أو أطاريح أو كتب أو أبحاث أو أي منشورات علمية تم نشرها أو تخزينها في أي وسيلة اعلامية، وتأسيسا" على ما تقدم فانني أتحمل المسؤولية بأنواعها كافة فيما لو تبين غير ذلك بما فيه حق مجلس العمداء في الجامعة الأردنية بالغاء قرار منحي الدرجة العلمية التي حصلت عليها وسحب شهادة التخرج مني بعد صدورها دون أن يكون لي أي حق في التظلم أو الاعتراض أو الطعن بأي صورة كانت في القرار الصادر عن مجلس العمداء بهذا الصدد.

توقيع الطالب: .... التاريخ: ٢٩ / ١٢ / ٢٠١١



EVALUATION OF OUTPATIENTS PHARMACIES' COUNSELING BEHAVIOUR AND CONTENT IN JORDAN UNIVERSITY HOSPITAL (JUH)

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This Thesis was Submitted in Partial Fulfillment of the Requirements for the Master's Degree of Clinical Pharmacy

Faculty of Graduate Studies
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December, 2011

COMMITTEE DECISION

This Thesis/Dissertation (Evaluation of Outpatient Pharmacies Counseling Behaviour and Content in Jordan University Hospital (JUH)) was successfully Defended and Approved on Wednesday 28th of December 2011

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Dedication

I would like to dedicate my thesis to my country, KUWAIT & to my second country JORDAN

To my mother, father, sister and husband who offered me unconditional love, motivation and support throughout the course of this Thesis.

Acknowledgement

First of all, I would like to thank God, the Almighty, for having made everything possible by giving me the chance, strength and courage to complete this work and to continue my study to this level.

To be able to step strong and smooth in this way, I have been supported and supervised by many people to whom I would like to express my deepest gratitude:

I am extremely thankful to my country; The State of Kuwait, for believing in my abilities and for the moral and financial support throughout this work. Special thanks to my family members for their unconditional love, prayers, their support, encouraging words and for just being there for me.

My deepest gratitude to Dr. Mayyada Al-Wazaify, my supervisor, for her unselfishness, encouragement, guidance and patience she demonstrated during my study. She had provided me with invaluable guidance and comments. I am thankful to Dr. Abla Al-Bsoul, my co-supervisor, for her information, time and instructions to achieve this study. Also, I would like to thank Dr. Al-Moatasem Yousef for his useful comments and the statistical lectures throughout methodology course that helped me a lot in the data analysis

Gratitude goes to all pharmacists and pharmacists' assistants at the JUH who participated in this project and devoted their time for completing the questionnaires.

To all professors, assistants at the Faculty of Pharmacy, the University of Jordan, and to all my friends and colleagues in Kuwait and Jordan, God bless you all.

To all of the above mentioned, I extend my deepest appreciation.

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List of Abbreviations

Abbreviation	Meaning
ATP III	**Adult Treatment Panel III**
ADA	**American Diabetic Association**
ASCP	**American Society of Consultant Pharmacists**
ASHP	**The American Society of Health-System Pharmacists**
JNC7	**Joint National Committee for High Blood Pressure**
JUH	**Jordan University Hospital**
LDL-C	**Low Density Lipoprotein Concentration**
OBRA	**Omnibus Budget Reconciliation Act**
PC	**Pharmaceutical Care**
PSA	**Pharmaceutical Society of Australia**
SPSS	**Statistical Package for the Social Sciences**
Vs.	**Versus**
WHO	**World Health Organization**

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EVALUATION OF OUTPATIENT PHARMACIES COUNSELING BEHAVIOUR AND CONTENT AT JORDAN UNIVERSITY HOSPITAL (JUH)

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ABSTRACT

Aim

The aim of this study was to characterize and evaluate the counseling behavior and content by pharmacists and pharmacy assistants in a sample of outpatient pharmacies at Jordan University Hospital (JUH).

Setting

Part I included Six outpatient pharmacies at the JUH; endocrinology, cardiology, respiratory, pediatrics, family medicine and emergency staff. Part II, included all pharmacists and pharmacists' assistants working at all pharmacies department at the JUH.

Methodology

The study involved different 2 parts:

Part I consisted of observing 60 patient-pharmacist or assistant interactions behaviors and counseling content (if exists) of 6 different outpatients' pharmacies in the JUH. Observations were conducted by a trained researcher using a pre-validated data collection form (Montgomery, *et al.*, 2010; Tully, *et al.,* 2011*)*. The form evaluates mainly the pharmacist interaction with patients, the initiator of counseling (if exist), the information content (e.g. Indication of the drug, dose, route of administration, using any aids or tools for explanation, frequency, duration, special directions or precautions while using the medication, etc).

In part II, a pre-validated questionnaire was adopted and modified from Puspitasari, *et al*. (2009) and other literature reviews (Al-Omar, *et al.,* 2011; Awad, *et al.*, 2010; Ax, *et al.*, 2010) and then modified in order to b applicable to the pharmacy setting in Jordan. The research instrument was then distributed by hand to all members of the sample. The questionnaire consisted of two sections. Section 1: included questions to brief describe themselves and the pharmacy setting they work in. Section 2: included questions to estimate their perception on their counseling behaviors and the type of information they provide

Results

Sixty patient-pharmacist and assistant's interactions were observed in part I. Seventy percent of the interactions were without any verbal counseling, however, written information with the basic instructions was provided. A small percentage of patients (17%) received pharmacist or assistant initiated counseling. The majority of medications were simply handed to the patients (70%), counseling on new medications was 22% and about 8% of counseling was on refills. The average mean counseling time (in seconds) was 49.4 ± 34.3. The interaction and counseling time was significantly related to the number of pharmacy staff.

In part II, a total of 47 of 61 questionnaires were returned, resulting in a response rate of 83%. It was completed by 30/ 32 (94%) pharmacists and 17/ 29 (59%) assistants. The reported counseling rates indicated that 48.9% of all patients were counseled about medications. About 75% of the prescriptions were counseled verbally for new medications compared to only 25% of refill prescriptions. Majority of participants reported to counsel patient on new medications about the indication, dose, route of administration, if to refill or not and explaining generic substitutions. No significant relationship ($p > 0.05$) between the staff job description (pharmacist or assistant) and the technique of counseling provided (verbal or written). Moreover, the counseling duration for both new and regular (refill) prescriptions were insignificantly ($p > 0.05$) related to the gender, employment (pharmacist or assistants), setting (inpatient or outpatient), age, years of experience, latest educational degree, or the place of the last degree obtained. Barriers perceived by the participants were working load (n=25, 53%), lack of staff (n=16%) and lack of time (n= 14, 30%).

Conclusion

The overall observed rate of counseling in JUH pharmacies is low. On the other hand, pharmacists and assistants mainly tended to give out basic written information including the dose and frequency. Pharmacist-patient communication and counseling behavior needs to be further developed into a more patient-centered approach in order to increase patients' benefits of knowledge about their medications. Moreover, the reported heavy working load, lack of time and lack of staff were the main barriers standing against the implementation of patients' counseling.

CHAPTER ONE

INTRODUCTION

In Jordan, pharmacists' role has significantly grown and developed in the past few years (Al-Wazaify and Albsoul-Younes, 2005). It does not only include the traditional product-oriented role of the pharmacist (e.g. dispensing and formulating drugs), but has also extended to include the more patient-focused new clinical role of the pharmacist (i.e., patient education, in addition to preventing, identifying and solving treatment-related problems), or what can be summarised as providing *Pharmaceutical Care* (PC) to patients.

PC is relatively a new philosophy of practice, the goal is to optimize the patient's health-related quality of life and to achieve positive clinical outcomes (WHO, 2003). PC includes mainly:

- Educating the patient or the person caring for the patient about their medications and the conditions for which they are prescribed to ensure maximum therapeutic benefit and safety;
- Reviewing the patient's medication history;
- Continuous monitoring of the patient's therapy;
- Screening for potential adverse effects; and
- Monitoring the patient's ability to take his or her medications correctly and to adhere to the prescribed therapies.

Currently, the national drug policy in Jordan involves a comprehensive human resources development plan for pharmacists that focuses on pharmaco-epidemiology, pharmacoeconomics, pharmaceutical care, and medication information systems (Al-Wazaify and Albsoul-Younes, 2005; Albsoul- Younes, *et al*., 2008; Tahaineh, *et al*., 2009).

Patients' well-being and drug-related needs are the primary concern of the PC practitioners (Cipolle, *et al*., 2004). Drugs dispensed by the pharmacist are administered for the purpose of achieving definite outcomes that would improve the patient's quality of life. These outcomes are either curing the disease, reducing or eliminating symptoms, arresting or slowing disease progression, or preventing diseases or symptoms (Hepler, *et al.,* 1990). On the other hand, the use of drugs may lead to unpredictable adverse drug reactions, increases in morbidity, mortality or increases health care cost due to noncompliance or poor knowledge given to the patients (Osterberg, *et al.*, 2005). Lack of patients' knowledge about their medication can lead to serious problems that can be avoided by appropriate patient education. Therefore, pharmacists do have a unique opportunity to maintain good health, to avoid ill health and to make the best use of medicines (Kansanaho, *et al.,* 2002).

One of the most important aspects of the PC is counselling. It is the pharmacists' responsibility to counsel the patient before dispensing the medications (Palaian, *et al*., 2006). Counselling plays an important role, not only in enhancing the compliance but also, in reducing complications of non-adherence.

1.1. Patient counselling:

The American Society of Health System Pharmacists (ASHP) defines patient counselling as: *"providing verbal or written information about medications to the patients or his/her caregiver. It also includes providing proper directions of use, advices on side effects, storage, diet and life style modifications"*(ASHP, 1997). Whereas The American Society of Clinical Pharmacists (ASCP) defines counselling as: "*a one- to- one interaction between a pharmacist and a patient and /or caregiver. It is interactive in nature. It should include an assessment of whether or not the information*

was received as intended and that the patient understands how to use the information to improve the probability of positive therapeutic outcomes" (ASCP, 1998).

Counseling is the skilled use of the relationship to help the patient develop self-knowledge, self-esteem and the ability to take control of his/ her life (Nettleton, *et al.*, 2000). Pharmacists are often the only health care providers who focus on patient education on medication: how to take it, what to expect, in addition to side effects and drug interactions (McDonough and Bennet, 2006). In pharmacy practice, counseling ranges from simply stating the dosage of a drug as it is dispensed to the patient, to giving advice with regard to lifestyle and health promotion issues, like smoking cessation, weight control, blood pressure control, sugar and cholesterol testing (Pilnick, 2003). Counseling is part of the dispensing process. However, an important part of it is to ensure that the patient fully understands the instructions and warnings of his or her medication (Kansanaho, *et al*., 2002).

1.2. The need for patient counseling

The type and content of information provided to patients during the counseling session varies based on the specific patient's needs. In ideal situations, the pharmacist counsels patients on all new and refill prescriptions. However, several references (Visser, 2000; Hanlon, *et al*., 2004; Basheti, *et al.,* 2005; Gold, *et al*., 2006; Puspitasari, *et al*., 2009) it was recommended to pay special attention to counseling for the following groups of patients:

- Patients receiving a narrow therapeutic index medication (e.g. warfarin, theophylline, digoxin).
- Patients with chronic diseases that can lead to various complications such as diabetes mellitus, cardiovascular diseases, dyslipidemia.

- Parents for their children medications.
- Patients using medications with special storage or administrations directions (e.g., Insulin, different types of Inhalers, hygroscopic medications like isosorbide dinitrite).
- Patients taking multiple medications (polypharmacy) that may cause confusion and/or compromise compliance.
- Elderly with multiple medications (polypharmacy) and chronic conditions (co-morbidity).
- Females in child-bearing age, pregnant or breast-feeding ladies regarding safety of certain groups of medications.

1.3. The tools required by pharmacists to provide counseling

Effective communication is the ability to share ideas and receive information using verbal, written, and visual skills. In addition to the pharmacotherapy knowledge, pharmacists need to have good communication skills in order to provide effective and accurate patients' education and counseling (ASHP, 1997). Patients need to be actively involved in their health care, and it is essential that they develop a trusting and collaborative- therapeutic relationship with health care providers (Currie, 2003). The key to building a therapeutic relationship as well as successfully communicating with patients is to create an environment for the patient that has the right conditions for fostering good communication (Cipolle, *et al.,* 2004). Empathy, positive regard, and congruence define these conditions. Empathy is the process of communication to patients the feeling of being understood; it is putting yourself in the patient's situation. Positive regard is the process of communicating support to the patient in a caring and nonjudgmental way; it is communication that is genuine, unthreatening, and

unconditional. Communicating congruence involves the honest expression of the practitioner's own thoughts and feelings; it requires that the caring professional will respond honestly to the patient and attempt to be genuine in his or her relationship with the patient (Cipolle, *et al.,* 2004). Therefore, pharmacists must accept the responsibility for their patient care activities. Table 1 lists strategies that pharmacists can use to provide effective patient communication. Pharmacists should make every effort to provide an environment that is private, comfortable, and confidential for the patient and/or caregiver. This helps in focusing on the discussion and minimizing distractions. Also, this would encourage the patient to ask questions that otherwise would not be possible to be asked in public. The pharmacist must be an active listener (focusing on the patient), make good eye contact (being attentive, but not staring), being aware of own body language (facing the patient and giving him/her your undivided attention), recognizing and interpreting nonverbal cues from the patient (comparing their nonverbal behaviors to their verbal communication), and being aware of barriers that may prevent a good exchange between the pharmacist and patient (lack of privacy, interruptions, noise, etc) (McDonough and Bennet, 2006).

Table 1. Strategies for Establishing the Pharmacist-Patient Relationship
(McDonough and Bennet, 2006):

- Introduce self to patients during an encounter.
- Outline for the patient what will occur during the encounter.
- Demonstrate empathy or caring attitude so that the patient feels at ease.
- Discuss with the patient the amount of time needed for the encounter.
- Discuss the expected outcome of the encounter.
- Use feedback strategies throughout the encounter to ensure patient understanding.
- Ensure sufficient time for patients to ask questions towards the end of the encounter.
- Resolve a drug therapy problem in a timely manner.
- Follow up with patients.

Also, assessing the patient's cognitive ability and education level helps the pharmacist to adapt information to meet the patient's needs. In general, pharmacists should use easy-to-understand language; avoid jargons, colloquialisms, idioms and clichés (Langely and Belcher, 2009).

1.4. Counseling techniques:

Counseling can be done either by providing written or verbal information. Written information is essential to supplement and reinforce verbal information whenever verbal interaction is insufficient in providing information (American Society of Health System Pharmacists (ASHP, 1997); United States Pharmacopoeia (USP, 2004); Pharmaceutical Society of Australia (PSA, 2006).

Written materials are essential and must be accompanied with verbal counseling. Some authors consider the written information to be broad and superficial, and many patients need information tailored to their own situation (Swart, *et al.,* 1994). Written information helps the patient to recall information provided verbally. Moreover, learning aids such as pictograms, graphics, anatomical models, and medication

administration devices can be helpful for easier understanding. The integration of verbal and written materials into the counseling process may increase the effectiveness of the counseling process (Schmitt, *et al.,* 2011).

1.5. Contents of patient counseling:

Many guidelines have been published to cover the important points during patient counseling. Most guidelines provide recommendations to pharmacists to educate and counsel patients on both prescription and nonprescription medicines (American Society of Health System Pharmacists (ASHP 1997, United States Pharmacopoeia 2004, Pharmaceutical Society of Australia 2006), whereas Omnibus Budget Reconciliation Act of 1990 (OBRA) provides mandatory guidelines for pharmacists on counseling patients on prescribed medicines only (Puspitasari, *et al.,* 2009). Therefore, pharmacist counseling must be extended to both new and refill prescriptions.

In general, the minimal requirements for counseling must include (ASHP, 1997):

- Pharmacist should introduce him/herself.
- Ask of any non-prescription medications been/being taken.
- History of any drug allergy.
- The medication's trade name, generic name and if there is substitution by another company.
- The expectations of using the medication positively (i.e., curing the disease, eliminate or reduce symptoms, slow disease process, or prevent a disease or a symptom).
- The expectations of using the medication negatively (i.e., medication side effects, alarming signs) including ways to prevent them and the action required if they do occur.

- Dosage, dosage form, route of administration, and expected duration of drug therapy.
- Special directions and precautions for preparation and administration.
- Common/ potential drug-drug or drug- food interactions and therapeutic contraindications that may be encountered, including ways to prevent them and the action required if they do occur.
- Techniques for self-monitoring of drug therapy.
- Actions to be taken in case of a missed dose.
- Verify the patient's knowledge and understanding.
- Ask the patient if he/she has any questions.

1.6. Counseling on lifestyle modifications:

Pharmacists are highly accessible and trusted health care providers. They have frequent contact with patients who could potentially benefit from lifestyle-modifications education. Therefore, pharmacists are in an ideal position to offer patients information, guidance, and counseling regarding lifestyle changes that can help in preventing and managing their medical conditions. Therefore, preventing and treating chronic diseases through lifestyle modifications is becoming an important aspect of patient-care regimens. Many published guidelines for treating chronic diseases emphasize on educating the patient about the necessity of lifestyle modifications. For example, the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC7, 2004), American Diabetic Association (ADA, 2010), and the Adult Treatment Panel III (ATP III, 2002) for management of dyslipidemia guidelines, all strongly encourage the patient's counseling on lifestyle modifications by pharmacists. The pharmacist can

counsel the patient about the proper diet, encourage weight reduction, physical exercise, smoking cessation, and explain monitoring devices (Palaian, *et al*., 2006).

1.7. Documentation:

Documentation refers to recording all patient-specific information, clinical decisions, and patient outcomes that are recorded for use in practice (Cipolle, *et al.,* 2004). This includes everything written down in long-hand, or entered into a computer program that becomes data and is used to facilitate the care of the patient (Cipolle, *et al*., 2004). Documentation maybe as simple as a check list or as detailed as recorded notes in the patient's profile (ASHP, 1997).

Ideally, the pharmacist should record in each patient visit (ASHP, 1997):

- A summary of the patient's medication history on admission, including medication allergies and their manifestations.
- Oral and written consultations provided to other healthcare professionals regarding the patient's drug therapy selection and management.
- Physicians' oral orders received directly by the pharmacist.
- Clarification of drug orders.
- Adjustments made to drug dosage, dosage frequency, dosage form, or route of administration.
- Drugs, including investigational drugs, administered.
- Actual and potential drug-related problems that warrant surveillance.
- Drug therapy-monitoring findings, including:

1) The therapeutic appropriateness of the patient's drug regimen, including the route and method of administration.
2) Therapeutic duplication in the patient's drug regimen.
3) The degree of patient compliance with the prescribed drug regimen.
4) Actual and potential drug- drug, drug- food, drug- laboratory test, and drug- disease interactions.
5) Clinical and pharmacokinetic laboratory data pertinent to the drug regimen.
6) Actual and potential drug toxicity and adverse effects.
7) Physical signs and clinical symptoms relevant to the patient's drug therapy.

- Drug-related patient education and counseling provided.

1.8. Literature Reviews:

Despite the important advisory role of pharmacists in providing patient counseling and education, there is few published research on the nature of these interactions, or the kinds of communications that must be provided by the pharmacists (e.g., Kansanaho, *et al.*, 2002; Pilnick, 2003; Phokeo, *et al.*, 2004; Awad, *et al.*, 2006; Awad and Abahussain, 2010; Montgomery, *et al.*, 2010; Shah and Chewning, 2010; Al-Omar, *et al.,* 2011; Hulten, *et al.*, 2011).

The researcher aims in the following part to provide the reader with an overview of published studies that evaluated the counseling process provided by pharmacists world-wide and the importance of patient education.

1.8.1. Patient Education

Patient education is the practice of increasing the knowledge and awareness of patients concerning their medical condition(s) (Fisher, 1992). Patients need to adhere to their treatment regimen to ensure maximal therapeutic success. Many researchers emphasize on the importance of the pharmacist role in educating patients (e.g., Radecki and Swofford, 1986; Simonsmeier and Brushwood, 1989; Swart, *et al*., 1994; Nupponen, 1998; Nettleton, *et al*., 2000; Visser, 2000; Palaian, *et al.,* 2006). The success of patients' treatment plan is directly related to his/ her compliance. The previous mentioned published researches in the area of patient education and compliance stressed on the importance of providing pharmacists with knowledge and necessary skills to enhance patient's compliance. Fisher (1992), reports that good pharmacist-patient communication is a critical determinant of how effective the educational strategy can become. Pharmacist- patient communication relationship is humanistic and functional in nature, such as building rapport, explaining, questioning, listening and nonverbal communication (Cavaco and Roter, 2010). Verbal, written and more recently, audio-visual forms of communication and any combination thereof, are being used extensively for the purpose of increasing the cognitive skills of patients (Fisher, 1992).

A new study conducted by Penn, *et al.* (2011) to study facilitators and barriers to adherence in four South African antiretroviral therapy (ART) clinics, explored the context and communication factors in relation to the role of the pharmacist in providing counseling to patients. It was concluded that the keys to achieve "adherence" lies in the minute details of communication, in conveying and respecting different health beliefs and perspectives, encouraging shared decision making (the so-called concordance) and creating a patient- centered therapeutic relationship in which a sharing of power, therapeutic goals and responsibility takes place.

Working with patients to enhance treatment adherence helps to strengthen and maintain a collaborative patient- provider relationship (Rubin, 2005). Patients who are satisfied with their provider- patient relationship are more likely to return for follow-up, which is the most powerful predictor of treatment adherence and other self-care behaviors (Rubin, 2005).

Regarding the same idea, a study has been conducted by Borgsteede, *et al*. (2011) to explore the patient's needs on information about medication at hospital discharge and how this contributes to patient safety by improvement of knowledge and adherence. Four aspects emerged as important issues in information about medication at discharge: (1) basic information (i.e. name of drug, indication and use), (2) information about side effects, (3) information about alternatives, and (4) what to do when medication problems are encountered. Patients stated that they preferred a combination of oral instructions and written information and both patients with or without Intervention were generally satisfied with counseling at discharge.

1.8.2. Labeling Medications

Labels play an important role in patients' proper understanding of their medications. The ability to understand medications label instructions is critical, both as *health literacy* and *medication safety* concerns. This is especially true since other sources of patient medication information are insufficient. In spite of its potential values, there are fewer standards and regulations exist regarding their content and format, also it varies according to the dispensing pharmacy (American Collage of Physicians Foundation, 1997). However, it is still the responsibility of the pharmacist or pharmacy technician dispensing the items to ensure that the label is correct. The accuracy of the label is of paramount importance as it conveys essential information to the patient on the use of the

preparation. Labels act as a permanent reminder of the key points that the patient needs to know. It helps indicating clearly the contents of the container, how and when the medicinal product should be taken or used, how the product should be stored and for how long, any warnings or cautions of which they need to be made aware. Labels should be positioned correctly; i.e., ensuring that the patient can open the container without destroying the label. Also, the label print size and quality must be checked to ensure that it can be read clearly (Langley and Belcher, 2009). All labels for dispensed medicines must have the name of the patient, preferably the full name, not just initials. The date and the name and address of the pharmacy are also required. All labels must state the name of the product dispensed, the strength where appropriate and the quantity dispensed (Langley and Belcher, 2009). Simple language must be used to explain the instructions of usage in order to be understandable to patients. Warning labels may also be required. However, the pharmacist or pharmacy technician needs to pass certain key information to the patient or their representative verbally. And verify their understanding what they have been told and check to see if they have any questions.

1.8.3. Counseling and Communication Skills:

Effective communication by pharmacists is essential to improve the use of medications by patients and ensure optimal therapeutic outcomes. There are few studies, up to the researcher's knowledge that have evaluated the patient counseling process provided by pharmacists. One of the most recent studies conducted by Montgomery, *et al*. (2010), to characterize the counseling behavior of five community pharmacists providing a pharmaceutical care (PC) service in Sweden and to describe the content of the consultations. It was conducted on the content of 16 of their consultations provided in their community pharmacies. The mean length of consultation was 31 minutes (range

15–56). It was concluded that the patient–pharmacist relationship forms the cornerstone of practice. Their counseling behavior was observed and it was reported that pharmacists giving attention to their computers during the consultation limited their abilities to practice patient centered care or communicate properly with patients. Therefore, it is of great importance to emphasize the necessity for pharmacists to understand the concept of patient- centered (i.e., care that places the patient's needs as the focus of the practitioner's work and does not fragment the patient into disease groups, organ systems, or drug categories (Cipolle, *et al.,*2004)) and to develop strategies and counseling techniques.

Another observational and interview study conducted by Fjortoft (2006) on 8 pharmacists and 13 pharmacy technicians in 5 community pharmacies in the Greater Chicago area to identify caring behavior of community pharmacists demonstrated in the pharmacist- patient interaction. The study consisted of two parts: (a) in the observational part, pharmacists and technicians were observed during their communication with patients. (b) In the interviews, two observed pharmacists were asked questions related to communication skills and behavior. As explained below in table 2, many of the pharmacy task behaviors observed and identified in this study. From the observational part it was remarkable that despite the large volume of prescriptions in most of the pharmacies observed, that the pharmacists knew so many of their patients by name. Recognizing and calling someone by their name acknowledges that person as a unique and wholly individual human being, with unique problems and concerns. Pharmacists responded to patients' need to talk by listening and by their fear from upcoming surgery by calming and reassuring, they were interacting with patients in a "holistic" manner. Moreover, pharmacists assisted patients in using devices, informed them of insurance

opportunities for discount drug programs, and provided information and encouragement on lifestyle changes and monitoring their disease. The interaction and the relationship focused on achieving better health for the patient. The observed pharmacists stated in the interviews that a caring pharmacist was about "being for the patient," and both noted that caring pharmacists greet the patient, inquire about the patient's health and family, and are sincerely interested in the patient. The observational data and the interviews provided depth and richness to our understanding of the pharmacist- patient interaction in that study (Fjortoft, 2006).

Table 2: Description of Caring Behaviors Demonstrated by Pharmacists (Fjortoft; 2006).

Physical behaviors	• Leans toward patients • Looks patient in the eye • Smiles at patient • When patient lowers voice, pharmacist's lower voice • Voice adapts to patients: speaks slowly and clearly to elder patients, upbeat tone of voice and speaks quickly when appropriate • Calm voice
Relationship behaviors	• Greet patients • Knows patient's name • Calls patient by Mr./Mrs./Ma'am./Ms. • Small talk with patient: weather, family's health, patient's health or rehabilitation, current events • Empathize with patients: price, speed of service, insurance, health • Patient with patient: repeats information, listens to all questions and conversations • Ending conversation: have a good weekend, take care • Laughs and jokes with patient • Acknowledges waiting patient, if on the phone • Keeps tracks of patients waiting and acknowledges them • Respectful of patients' time: call before you come in • Very polite: thank you, your welcome • Reassuring with patient: you'll feel better after you start this medicine • Focuses on patient in spite of others waiting • Affirming and encouraging of patient's changes in lifestyle
Task behaviors-non-pharmacy	• Explains receipt • Explains money transaction • Provides directions to location of store items

Task behaviors-pharmacy	• Clarifies and explains medicines and directions for taking them • Calls physician regarding refills, changes in prescriptions • Explains different doses • Clarifies and resolves insurance issues and medicare issues, public aid issues • Provides lifestyle counseling • Explains and discusses medical devices and provides information on where to obtain them • Asks for allergies and provides information regarding interactions • Provides information regarding nonprescription medications/dietary supplements and takes patient to their location in the store • Takes time to teach technicians • Discusses new treatment options, as seen on television • Advises patient to see a physician • Explains disease • Asks if flavor is acceptable • Provides printed materials to help patient monitor blood pressure or blood glucose levels • Provides state discount drug plan application and offers to help patient fill it out • Offers and cuts tablets in half for patient • Teaches patient how to cut tablets in half • Discusses upcoming surgery with patient and proactively sends note to physician regarding after surgery prescriptions so they can be ready for patient

1.8.4. Counseling in chronic illnesses

Pharmacists play a vital role in patient education on drug use. Moreover, they have a unique opportunity to support patients undergoing long-term treatment, since they are accessible and frequently contacted health professionals (Vainio, *et al.,* 2001). They are often the only member of the health care team who has access to information about *all* of the patient's medications (Carter, *et al.*, 2003).Importantly, a physician may be unaware of concomitant therapies prescribed by another physician for a given patient (Carter, *et al.*, 2003).

Enhancement of pharmacists' counseling enables the doctors to spend more time on patients' examination and diagnosis as the counseling part is taken care of by the

pharmacist (Palaian, *et al.,* 2006). The collaborative patients care provided by the pharmacists including interviewing patients, reconciling medications, and providing patient discharge counseling and follow-up all resulted in improved outcomes of the patients as stated by Kaboli, *et al.* (2006).

Adherence to self-administered therapies is expected to be inversely correlated with the duration of therapy, number of medications, their complexity and cost (Lerman, 2004). Reasons for non-adherence range from simple forgetfulness, changes in daily routine, depression or possibility of drug dependence, uncertainty about the effectiveness of treatment, lack of knowledge about the consequences of poor adherence, regimen complexity to poor social support, economic problems and treatment side effects (Hynes, *et al.,*2002; Lerman, 2004).

Patient adherence is a key factor in the therapeutic success, especially in chronic drug therapy and pharmacists can play an important role in providing patient counseling resulting in the improvement of the therapeutic outcomes and quality of life (Morrison, *et al.*, 2001). Several guidelines specify the points that need to be covered by the pharmacist while counseling patients. Patients with chronic diseases such as diabetes mellitus, cardiovascular, and respiratory diseases need special attention during counseling and education. Lindenmeyer, *et al*. (2006), found that pharmacists can improve the management of patients with diabetes by supplying patient education and facilitating communication between patients and health care professionals, this role of the pharmacist could greatly improve not only adherence, but also patient satisfaction and his/her quality of life.

Khan, *et al.* (2010) conducted a study, in India for a period of 3 months, to determine whether the pharmacists' counseling offered to diabetic patients regarding disease, medications, diet/ nutrition, personal hygiene and exercise can improve glycemic

control and associated complications. Their work consisted of counseling on diabetes patients, designed questionnaires were formed to assess the perception of the patients about their disease (symptoms, cause, prognosis and complications) and to assess the changes in the perception after the pharmacist provided patient counseling and also motivated the patients to practice healthy life styles. The questionnaires' were distributed to patients in pre- and post- counseling manner to assess the improvement of their knowledge after pharmacists' counseling and education on medications and lifestyle modifications. The significant changes in the average responses to questions of pre-counseling (37.94 %) and post counseling (77.22 %) were observed. This study reveals that patient counseling by pharmacists not only improves the knowledge, attitude and practices of the patients towards their disease management but also increases their quality of life.

Moreover, managing chronic diseases (e.g., cardiovascular and respiratory diseases) generally necessitates a complex regimen of medications to prevent and/or delay the disease's progression, control symptoms, decrease re-hospitalization and improve survival. As non-adherence, which can have severe negative outcomes, is common among cardiovascular patients, frequent monitoring and both pharmacological and non-pharmacological treatment counseling and education are strongly encouraged to ensure maximal therapeutic outcomes (Mckenny, *et al.,* 1973; Hovell, *et al.,* 1984). The pharmacist role in counseling patients is essential especially in newly diagnosed and medication naive patients (i.e., those who are taking the medications for their first time). Vanelli, *et al.* (2009) found that those patients are at a higher rate (32%) to discontinue their medications in less than 30 days of initiation.

A randomized controlled trial was conducted by Lee, *et al*. (2004) on patients who were newly prescribed lipid-lowering drugs for hyperlipidemia. The study contained two

groups; a control and an intervention. The patients in the intervention counseling group received "intense" counseling; they were told about cholesterol and the potential cardiovascular risks of having hyperlipidemia, as well as the results of each patient's lipid profile. Also, the use of lipid-lowering drugs, the dose, the time of administration, and adverse effects were explained to the patients. The importance of compliance to the drug regimen was emphasized. The pharmacists also gave individualized advice on therapeutic lifestyle changes. All patients were given an educational booklet about the management of hyperlipidemia and a card that contained information about cholesterol contents in food. The cholesterol concentration was measured by a pharmacist for 3 months. The control group received routine counseling over the counter by the pharmacy staff. The counseling involved providing information about the indication, achieved 28.3%, 27.7%, and 26.1% reduction in total cholesterol, LDL-C, and triglycerides, respectively, compared with 15.3%, 16.3%, and 10.6% in the control group. Of patients in the intervention group, 85% felt that the pharmacist counseling service could improve their disease management. The study demonstrated that pharmacists' individualized counseling, together with the assessment of cholesterol concentrations, had positive impacts on the management of hyperlipidemia, including improved drug compliance, better treatment endpoints, and patient satisfaction.

Pharmacists can also play an important part in asthma education by counseling their patients on the safe and effective use of medications (Basheti, *et al.,* 2005; Broers, *et al.*, 2005; Wang, *et al.,* 2010). This exchange of information between the pharmacist and the patient encourages the patient and family to take responsibility for asthma management and outcomes. By following their physician's directions and taking their medications correctly, patients are much more likely to experience positive outcomes to their illnesses (Hunter, *et al.*, 1994).

One study conducted by Wang, *et al.* (2010) to assess the impact of an asthma educational program provided by a nurse combined with asthma counseling provided by a pharmacist on asthma knowledge, quality of life and clinical outcomes in Taiwanese patients with asthma. Ninety one asthmatic patients were randomly assigned to a nurse-administered education program (Group 1), the education program with additional pharmacist counseling (Group 2), or a control group receiving routine care only (control). Three questionnaires were used to measure participants' knowledge, health related quality of life, and medication adherence pre- and post-intervention. They were assessed at months 0, 3 and 6. Outcomes were compared between groups to determine efficacy. Compared with baseline, knowledge scores for intervention group, it was significantly ($p < 0.0167$) increased with time, but not in the control group. The results indicated that pharmacist counseling, as an adjunct to nurse-administered asthma education, significantly increased patients' knowledge of asthma and improve asthma symptoms.

Moreover, Thomas, *et al*., (2000) and Schnipper, *et al.,*(2006) found that counseling patients on their discharge medications reduces the incidence of preventable adverse drug reactions, especially in elderly due to the complexity in their therapeutic regimen and special consideration of the physiology of aging process (e.g. forgetfulness, polypharmacy, co-morbidities, loneliness, etc). Also, starting on a new medication for a newly diagnosed chronic disease needs appropriate pharmacist's advice and counseling as demonstrated by Clifford, *et al.,* (2006).

1.8.5. Counseling elderly:

As mentioned above, older people are a vulnerable group to non-adherence due to the effects of aging and increased propensity to develop multiple diseases that require

pharmacological and non-pharmacologic treatment (Banning, 2009). It has been estimated that up to 10% of older people are susceptible to unplanned admission to hospital due to drug-related causes (Banning, 2009). Education of elderly patients may be more challenging because they frequently require more medications, may suffer from cognitive deficits, and may have physical limitations (e.g., failing eyesight and hearing). Furthermore, some elderly patients view their condition as hopeless and believe that nothing can be done to improve their disease outcome (Stewart, *et al*., 1989; Miller, 1997; Dunn, 2005).

In general, pharmacists have predominantly been recruited to intervention studies to provide advice and guidance to patients on how to manage their medicines (Nazareth, *et al*., 2001; Wu, *et al*., 2006). Although the heterogeneity of studies designs makes it difficult to compare study outcomes, Wu, *et al*., (2006) and Lu, *et al.,* (2008) agreed that pharmacists' involvement was beneficial as they helped to augment adherence with medication in older people.

CHAPTER TWO

AIMS AND OBJECTIVES

This study aimed to evaluate the counselling process (content and behaviour) provided by a sample of a teaching hospital pharmacists and pharmacists' assistants at Jordan University Hospital (JUH) in Amman.

To the best of the researchers' knowledge, this is the first study of its kind in Jordan that evaluates the behavior and content of pharmacists' patients counseling.

2.1. The Main Objectives of the Study were:

1. To describe the counseling behavior of pharmacists and pharmacists' assistants at JUH with a special focus on whether patient centered rather than product centered service is mostly practiced.
2. To investigate the detailed content of counseling (if available) and the type of information provided (e.g. verbal, oral, etc).
3. To describe the shape of patient-pharmacist interaction (i.e., the initiation, length, closing, *etc*)
4. To identify the most commonly dispensed medications in each pharmacy and the counseling (if any) provided.
5. To draw up recommendations (based on the observational part of the study) that will serve (in the future) as aground for improvement.
6. To compare between the self-reported and the observational parts part of the study. This will provide an idea about how do JUH pharmacists self-evaluate their provision of care.

7. To compare between the pharmaceutical care provided (if any) by JUH pharmacists and pharmacy assistants.
8. To compare the results of this study with those reported in the literature with analysis of reasons for similarities or differences that may emerge.

2.2. Study Hypothesis:

1. Pharmacists and pharmacy assistants in JUH do not provide proper counseling (pharmacological and non-pharmacological) to patients in the outpatients' pharmacies.
2. The main reason for this claimed non-provision of counseling was the limitation of time and work-load.
3. There were differences between what is really observed in the pharmacy and the pharmacists' and pharmacy assistants' perception of their behavior in patient-counseling.

CHAPTER THREE

METHODOLOGY

This study (being the first one of its kind in Jordan) used both the Qualitative and Quantitative research methodologies in the forms of observational study and questionnaire, respectively.

The study consisted of two parts; the first part was observational to evaluate the content and behavior of counseling (if any) that takes place in a sample of 6 outpatient pharmacies at JUH. The second part involved a self-reported survey of all the staff working at the Department of Pharmacy at JUH. The explanation of each of these parts is to follow below.

3.1. Qualitative study (Observational part)

Qualitative methods have become more common place in areas such as health services research and health technology assessment (Mays and Popes, 1995). In qualitative research, concern about assessing the quality has manifested itself recently in the proliferation of guidelines for doing and judging qualitative work. Qualitative researchers study phenomena and events in their natural settings. Often interpreting them in terms of the subjective meanings attached by the individual, they do not primarily seek to provide quantified answers to research questions (Pope, *et al.*, 2002). The goal of the qualitative research is the development of concepts which helps us to understand social phenomena in natural (rather than experimental) setting, giving due emphasis to the meanings, experiences, and views of all participants (Popes and Mays, 1995).

Qualitative research methods include mainly face to face interviews and observations.

Observational method is especially useful in studying quality issues as it allows researchers to uncover everyday behavior rather than only relying on interviewing accounts. It is increasingly used in the study of organization and delivery of care and can be especially useful in uncovering what really happens in particular healthcare settings (Pope, *et al.*, 2002).

Observational methods used in social science involve the systematic, detailed observation of behavior and talk: watching and recording what people do and say (Mays and Popes, 1995). It is used to provide a description and understanding of a situation or behavior.

3.1.1. Subjects and sampling

A predetermined schedule was prepared in order to visit each pharmacy in a random manner at different days of the week and different times of the day. The target sample was 60 patient- pharmacist/or assistant interactions, 10 for each recruited pharmacy. The JUH has 8 outpatient and inpatient pharmacies, each. Six different outpatient pharmacies at JUH have been recruited in this part of the study. The researcher chose these outpatient pharmacies specifically because they seemed to be the busiest and dispensed the most common and important types of chronic medications that would require counseling. The selected pharmacies were Endocrinology, Cardiology, Respiratory, Pediatrics, Family Medicine and Emergency pharmacy. The latter was included since it is believed that it encounters different types of medical problems and patients of different age groups, the fact that would require of the pharmacist to be cautious about counseling patients in terms of duration of use or referral to a clinic.

3.1.2. Study Design

Five consecutive patient-pharmacist/ assistant interactions were observed in the assigned pharmacy every day during the study. The counseling process (if available) was evaluated using the designed data collection form (Appendix-1).

To minimize the observer effect (Smith, 2002), details about the study objective were limited to *"wanting to evaluate the pharmaceutical care services provided by pharmacists and a drug utilization review"*.

A pilot study was conducted before the definitive launch in order to check the feasibility and to improve the design of the data collection form. The pilot study was conducted on 10% of the total target sample (n=5 consecutive patient-pharmacist/ assistant interactions). Pilot data were not included in the final data analysis.

3.1.3. The Research Instrument

The researcher used a data collection form that has been adopted from Montgomery, *et al.*, 2010; Tully, *et al.*, 2011 and then modified in order to be applicable to JUH pharmacies.

The data collection form (Appendix-1) was anonymous; no patients or pharmacists information were mentioned. The form has been designed to collect the following information during any patient-member of staff interaction:

A. The pharmacy department
B. The number of staff in the pharmacy (pharmacists, assistants and summation)
C. Who had dispensed the medications
D. Who had conducted the counseling to the patient
E. The number of medications dispensed.
F. Who was being counseled: the patient or the caregiver.

G. The interaction behavior between the pharmacist (or assistant) and the patient

H. Who is the initiator of questions (Pharmacist or patient)

I. Content of information provided in each interaction:

- Whether pharmacist is conveying respect, and care to patient during the interaction. This was evaluated through pharmacists' opening consequences, flow of information, clearness, enthusiasm, body language, eye contact, posture, and voice tone (Hall, *et al.*, 1995; Gallagher, *et al.*, 2001)
- Indication of the dispensed medication
- Dose
- Route of administration
- Frequency of administration
- Using any aids or tools for explanation
- Duration of treatment
- Special directions for preparation, storage or administration of medication
- Expectations of the medication used (description of how the patient will know that the medication is working well: changing symptoms, laboratory data functional status improvement)
- Discuss and explain common side effects
- Techniques for self-monitoring of drug therapy
- Special precautions while using the drug
- Drug- Drug or Drug-Food interactions
- Refills
- What to do if missed a dose
- Explain generic substitutions (if applicable)

J. The way of providing information:

- Verbal
- Written
- Both

K. The time spent in the interaction between pharmacist (or assistant) and the patient

L. A review of drugs dispensed to the observed patients.

M. Last part: the researcher's own qualitative notes and any miscellaneous observations that did not fall within the above categories, behaviors related to pharmacy practice (which can be defined as helping people to make the best use of their medications) which can be further classified as any behavior that may be good pharmacy practice (GPP), or on the contrary bad pharmacy practice (BPP) was noted; e.g. smoking in the pharmacy or counting tablets using bare hands etc). Also, if life style modifications counseling took place such as; counseling on diet, exercise, smoking cessation, stress reduction, annual medical examination or vaccination, etc.

3.1.4. Ethical Consideration

Before the launch of the study, a formal letter was sent to the Head of the JUH describing the study and asking for formal and ethical approvals. Approvals were obtained from the Administration, the Pharmacy Department and the Scientific Research Committee at the JUH. In addition approval was also obtained from Postgraduate Education Committee at The Faculty of Pharmacy/The University of Jordan (Appendix-2).

3.1.5. Data Collection Procedure

Data collection took place between April- May 2011. Pharmacy staff was informed about the identity of the researcher as a Clinical Pharmacy master student at The University of Jordan. The researcher had some experience in working with the out-patient pharmacy staff. To minimize the observer effect, the aim of this part of the study was limited to *"wanting to evaluate the pharmaceutical care services provided by pharmacists and drug utilization review"*.

The researcher observed both interaction and counseling behaviors. According to Merriam Webster Dictionary, interaction is defined as: "any mutual or reciprocal action or influence. While "counseling" as defined previously, by the American Society of Consultant Pharmacists (ASCP guideline, 1998), "involves a one-to-one interaction between a pharmacist and a patient and/or caregiver. It is interactive in nature. It should include an assessment of whether or not the information was received as intended and that the patient understands how to use the information to improve the probability of positive therapeutic outcomes". In the recent study, researchers had considered "interaction" as any encounter or reciprocal action that takes place between the patient and the pharmacist/or assistant whether it involves counseling or not. Thus, any counseling session can be considered as an interaction but not vice versa.

The researcher observed the interaction between patients-pharmacists/assistants from inside the pharmacy, standing beside the pharmacist or assistant on the dispensing counter. The researcher observed the mechanism of dispensing prescriptions. After the patient priced the available prescription's medications, he/she had to pay to the accountant and return back to the pharmacy to collect his/her medications. This process might take a minimum of 15 minutes (if the pharmacy is not crowded). The pharmacist/or assistant takes the prescription with the printed label and starts to fill the

available medications. Sometimes they write the missing information in the label such as instructions of frequency and its relation to meals. The pharmacist/ or assistant check the prepared medications for a second time before dispensing to ensure that all medications that has been paid is prepared in the same quantity. Finally, they call the patient's ternary name and dispense their medications. Sometimes, this process occurs for 2 or even 3 patients at the same time. During the dispensing process, the researcher attempted to be unobtrusive as possible and did not interact with the patients, the pharmacists or the assistants. The time of interaction, from the beginning of calling the patient's name and handling the medication was recorded (i.e., *interaction time*). If counseling was taking place during the interaction, then this was noted down as the *counseling time*. The data collection form was filled during and immediately after the observations. Any additional information related to pharmacy practice was written in the notes section at the end of the data form. Also, the prescription was examined and the dispensed medications were written in the data collection form.

3.1.6. Data Analysis

All data was coded and entered stepwise into SPSS® database for windows version 17. Categorical variables, including the initiator of counseling, the technique of information provided, the interaction behavior and the content of counseling process if included or not are expressed as a frequency (percentage). Chi-square test, Fisher's exact test and Kruskal- Wallis tests were used to analyze data. Significance was defined as $p < 0.05$. The qualitative part of the data was analyzed using the Content-Analysis method. Content Analysis involves a structured examination of the text by identifying any grouping themes and coding, classifying and developing categories (Popes and Mays, 1995).

3.2 Quantitative Part (Self-Reported Counseling Survey)

This part of the study used the quantitative self-reported survey methodology in order to assess pharmacy department staff (pharmacists and pharmacy assistants) self-perception of their counseling (if any) provided to patients. This part of the study has been conducted on all the pharmacists (n=32) and pharmacy assistants (n=29) at the JUH. The following part includes a description of the setting, study design and sample, data collection procedure, the research instrument and statistical analysis.

3.2.1 Subjects and Sampling:

The target sample of the second part of the study was all the pharmacists and assistants working at the JUH. Although the main concern of the research was the evaluation of *pharmacists'* counseling of their patients, pharmacy assistants were included because they accounted for 50% of the Department of Pharmacy staff at JUH and they share similar work load of dispensing to patients as pharmacists. Moreover, it was also beneficial for the completeness of the study to compare and explore differences between counseling (if any) provided by both groups.

The target sample was the whole number of staff working at The Department of Pharmacy at JUH (i.e., 32 pharmacists and 29 pharmacy assistants working at administrative, out- and in-patients positions).

3.2.2 Study Design:

A quantitative type of research was conducted after the end of the first part “the observational part”. The aim of this part of the study is to compare between what the researcher had observed and how do the pharmacists and assistants perceive their performance in terms of pharmaceutical care and counseling provision.

3.2.3 The Research Instrument:

The researcher used a pre-validated questionnaire that was adopted mainly from Puspitasari, *et al*. (2009) in addition to other literature reviews in order to censure content validity (Al-Omar, *et al.*, 2011; Awad, *et al.,* 2010; Ax, *et al.,* 2010). However, the questionnaire draft was then modified by the research team in order to be applicable to the setting at JUH.

Face validity was ensured by sending the questionnaire by e-mail to two experts in the field for reviewing (one in Jordan and the other in the UK). They both replied with minor modifications. Then, the questionnaire was piloted on a convenient sample of 10% (n= 6) of the target sample. These were pharmacists not employed at JUH.

After piloting, further modifications were made to clarify some questions (e.g., rephrase some questions and modify some answer options). The data from the pilot part was excluded from the final study analysis.

The questionnaire (Appendix-3) was anonymous and consisted of two sections (total of 24 closed-ended questions) as follows:

1) Participant's demographic data, education and job information.
2) Information related to counseling provided to patients.

3.2.4 Data Collection Procedure:

The data collection took place during June 2011. A total of 61 pharmacists and assistants were invited to complete a pre-piloted and validated questionnaire. The questionnaire was attached to a covering letter (Appendix-4) which explained the aims of the study.

The participants were to fill in the questionnaire anonymously and not in front of the researcher to ensure confidentiality. At the end of the questionnaire, and in case they

wish to obtain a copy of the final report of this research work the participating staff were asked to-voluntarily- write their email addresses. The questionnaire took average of 15 minutes to complete.

3.2.5 Free Text Response Analysis:

The qualitative data from some questions in the questionnaire were analyzed using the content analysis method. The responses have been read, summarized and grouped under potential thematic categories.

3.2.6 Statistical Analysis:

All data were coded and entered into the Statistical Package for Social Sciences (SPSS®) for Windows version 17. Frequency distributions were compiled and examined for responses to all questions. Descriptive analysis was conducted. Prevalence was reported as percentage. Categorical variables, including gender, employment, age ranges, education, country from where they had obtained last degree, their experience as practitioners, pharmacy setting, the range of prescriptions dispensed each day the rest of the questionnaire options were coded and later are expressed as a frequency (percentage).

Chi-square test and Fisher's exact test were used to determine the difference in proportion of a categorical variable between assistants and pharmacists. Significance was defined as $p < 0.05$.

CHAPTER FOUR

RESULTS

PART I: OBSERVATIONAL STUDY

4.1. Counseling Process and Interaction Behavior

Sixty patient-pharmacy staff interactions were observed during this part, distributed as 10 interactions for each recruited pharmacy. Five consecutive interactions per day were observed at different times of the day in the participating pharmacies. The six recruited outpatient pharmacies were: Endocrinology, Pediatrics, Respiratory, Cardiac Center, Family Medicine and the Emergency pharmacies. The total staff number was gathered on the visited days. The final analysis was performed to the data collection form (Appendix-1) for every observed patient-pharmacy staff interaction.

A total of 60 patient-pharmacist/assistant interactions were observed and noted down in the data collection form (Appendix 1). Out of the 60 observed interactions, 42 (70.0%) of the dispensing was carried out by pharmacists, while 18 (30.0%) of it was carried out by pharmacy assistants (Table 3). A sort of counseling was provided to the patient (n=13, 21.7%) and to the caregiver (n=5, 8.30%). The frequencies of counseling provided revealed that 17 (28.3%) of the counseling was provided by the pharmacists, while only 1 case (1.7%) was counseled by the assistant (Table 3).

Table 3. Dispensing and counseling process provided by pharmacists and pharmacy assistants in all observed recruited pharmacies (n=60)

Acting Staff	Dispensing	Counseling
The Pharmacist	42 (70.0%)	17 (28.3%)
Pharmacy Assistant	18 (30.0%)	1 (1.7%)
No action provided by either staff	0	42 (70.0%)*

* No counseling provided

4.1.1. Initiation of the patient-pharmacist interaction:

More than half (55.56%, n= 10/18) of counseling sessions were initiated by the pharmacy staff (i.e., pharmacists or pharmacists' assistants), while (44.44%, n= 8/18) of them were initiated by the patients themselves. The initiator of the counseling process was not significantly related to the dispenser of medication i.e., whether the pharmacist or assistant ($p > 0.05$). On the other hand, the initiator of counseling was significantly related to the type of outpatient pharmacy department ($p < 0.01$), where all initiations by pharmacist took place at the Emergency Department (ED) pharmacy. Table 4 shows the frequent initiator in each pharmacy section by numbers.

Table 4: Initiator of the counseling process in each pharmacy departments (n=18)

Initiator	**Endo-crinology (%)**	**Pediatrics (%)**	**Respiratory (%)**	**Cardiac Center (%)**	**Family Medicine (%)**	**Emergency (%)**	**Total (%)**
Pharmacy Staff	0	0	0	0	0	10 (55.56)	10 (55.56)
Patient	0	2 (11.11)	1 (5.56)	3 (16.67)	2 (11.11)	0	8 (44.44)

4.1.2. Techniques of counseling and interaction:

In the current study, about 2/3 (n=42, 70.0 %) of the provided information to patients in all interactions (n=60) was conducted using written labels only. Verbal information was never provided (0.0%), providing information both verbally and by writing was observed in 30% (n=18) of cases; the counseling cases.

As mentioned above, in 70.0 % (n=42) of the cases the patient was simply handed over his/her medications with written information. Counseling on newly prescribed medications comprised 21.7% (n=13) and about 8.3% (n=5) of counseling was on refills (Tables 5 & 6).

The chi-square analysis revealed that there was a significant relationship ($p < 0.05$) between the different pharmacies and the method of interaction with patients (Table 4). On average, the total number of pharmacists and assistants in all recruited pharmacies was 4. The number of pharmacy staff significantly affected the method of providing information ($p < 0.05$). Pharmacies with 4 or more members of staff (pharmacists and assistants) provided a higher percentage of written information (41.7 %) than pharmacies with lesser staff.

Table 5. Overall Interactions Observed in All Recruited Pharmacies (n=60)

Interaction Type	N (%)
Handing over medications without counseling	42 (70.0)
Counseling about newly prescribed medications	13 (21.7)
Counseling about chronic medications (Refills)	5 (8.3)
Total	60 (100)

Table 6.Characteristics of Observed Cases' Behaviors in recruited pharmacies. (n= 60)

Pharmacy	Handing over medications without counseling (%)	Counseling about new medications (%)	Counseling about chronic medications (Refills) (%)
Endocrinology	10 (16.7)	0	0
Pediatrics	8 (13.3)	1 (1.7)	1 (1.7)
Respiratory	9 (15)	0	1 (1.7)
Cardiac Center	7 (11.7)	0	3 (5)
Family Medicine	8 (13.3)	2 (3.3)	0
Emergency	0	10 (16.7)	0

4.2. Contents of patient counseling:

The counseling behavior and content included in the data collection form used in the observational part (Appendix 1) were analyzed and the frequency for each theme was recorded in Table 7. During the counseling process, the pharmacist (or assistant) did not

provide the patients with any additional information that had not been mentioned in the data form.

In the majority of the observed interactions (n= 42, 70%), patients were not provided with any of the information listed in the data collection form. On the other hand, in the cases where counseling took place (n=18, 30%), the observed frequencies of the contents could be arranged in a decreasing order as follows: counseling about the dose, followed by indication, frequency of administration, duration of treatment, and finally route of administration.

Table 7. Counseling behavior and content for all observed pharmacist-patient interactions (n= 60)

Counseling Behavior	If Counseling Provided:		No counseling provided (%) [b]
	Behavior was satisfying (%)	Behavior was not satisfying (%) [a]	
Pharmacist conveying respect, and care to patient [c]	18 (30)	(0)	42 (70)
Providing counseling about:			
Dose	17 (28.3)	(0)	43 (71.7)
Frequency	16 (26.7)	(0)	44 (73.3)
Indication of the drug	15 (25)	1 (1.7)	44 (73.3)
Duration (esp. Antimicrobials)	11 (18.3)	1 (1.7)	48 (80)
Route of administration	9 (15)	4 (6.7)	47 (78.3)
Explain generic substitutions	6 (10)	6 (10)	48 (80)
common Side effects	5 (8.3)	5 (8.3)	50 (83.3)
Refills	2 (3.3)	8 (13.3)	50 (83.3)
self monitoring of drug therapy	1 (1.7)	8 (13.3)	51(85)
precautions while using the drug	1 (1.7)	8 (13.3)	51(85)

Special directions for preparation, storage or administration	(0)	9 (15)	51 (85)
Expectations of the drug used	(0)	9 (15)	51 (85)
Drug- Drug or Food interactions	(0)	9 (15)	51 (85)
What to do if missing a dose	(0)	9 (15)	51 (85)

[a]Counseling was provided but these items were not included in the counseling process
[b]No counseling provided at all
[c]Greet the patient, Calm voice, the pharmacist (or assistant) is polite, ending conversation properly (Beardsley *et al.,* 2007)

No information was offered about special directions for preparation (e.g. antibiotic suspensions), storage (e.g. insulin) or administration of medication (e.g. inhalers, nebulizers, and insulin), expectations of the drug taken (e.g. relieving pain or inflammation, checking blood pressure or glucose) , drug-drug/ food interactions and what to do in case of missing a dose.

The questions patients most commonly asked the pharmacy staff about their medications had to do with the following:

- Generic substitutions
- When to take the medications (before or after meals)
- Indication of the medication
- Antibiotics duration, frequency and dose
- Routes of administrations especially eye/ear drops

4.3. Duration of Pharmacy staff-Patient Interaction and/or Counseling:

The average interaction time between patient and pharmacist/assistant (in seconds) was 5.14 ± 4.036 (mean ± SD). On the other hand, the average counseling time (in seconds) was 49.40 ± 34.329. Only 30.0 % (n=18) of the total number of patients observed in this part of the study were counseled. It is worth mentioning here that the female

pharmacist, who was in the Emergency department pharmacy during the observation period, counseled all the patients who were observed by using both written and verbal information.

4.4. Pharmacist vs. Assistant Counseling

Out of the 60 patient- pharmacist/or assistant interactions, 70.0% (n= 42) contained no counseling, 28.7 % (n= 17) of counseling was done by the pharmacist and only 1.7% (n=1) was conducted by an assistant. Also, the duration of counseling was significantly related to the job of who had conducted the counseling (assistant of pharmacist) ($p < 0.01$). The mean time of counseling provided by pharmacists was about 35.4 seconds. While only one case of patient-assistant counseling was observed with duration of 26 seconds. Although, counseling time was significantly related to employment, interaction time was not ($p > 0.05$). The mean average time of patient- pharmacist interaction was about 5 seconds, while patient- assistant interaction was 5.33 seconds.

4.5. Drugs Dispensed:

A total of 233 medications were dispensed during this part of study. The average number of dispensed medications in the 6 pharmacies included in this part of the study was 3.88 medications per patient. The details of different medicines dispensed by therapeutic categories are listed in Table 8.

Table 8. Most commonly dispensed medications in each pharmacy during the observational part of the study (in a decreasing order)

Pharmacy	Most Commonly Dispensed Medications
Endocrine diseases pharmacy*	• Atorvastatin (n= 6, 10%) • Metformin (n= 6, 10%) • Mixtard Penfill® Insulin (n= 2, 3.3%) • Levothyroxine (n= 2, 3.3%)
Pediatrics Pharmacy*	• Anti-pyretic Suspensions (Ibuprofen-Paracetamol) (n=3, 5%) • Carbamazapine tablets (n=3, 5%) • Antibiotic Suspensions (n=2, 3.3%)
Respiratory Diseases Ph.*	• Symbicort® (budesonide and formoterol) Turbohaler (n= 8, 13.3%) • Prednisolone tab. (n=6, 10%) • Ventolin® (Salbutamol) Inhaler (n= 6, 10%) • Antihistamine drugs (Loratidine) (n=6, 10%)
Cardiac Center Ph.*	• Antihypertensive drugs (e.g. Calcium channel blockers, Angiotensin converting enzymes inhibitors, Angiotensin receptors blockers, Diuretics, Beta blockers) (n= 21, 35%) • Atorvastatin (n=8, 13.3%) • Omeprazole (n= 3, 5%) • Digoxin (n=3, 5%)
Family Medicine Ph.*	• Antihistamine drugs (Loratidine, Actifed® (pseudoephedrine and triprolidine)) (n=6, 10%) • Antibiotics (Amoxicillin Clavulanate, Clarithromycin) tablets and suspensions (n=5, 8.3%) • Beclomethasone nasal spray (n=2, 3.3%) • Omeprazole (n=2, 3.3%)
Emergency Ph.*	• Antibiotics (Amoxicillin Clavulanate, Cefuroxime, Levofloxacin, Metronidazole) (n=7, 11.7%) • Antipyretic, nonsteroidal anti-inflammatory drugs: (Ibuprofen, Diclofenac sodium) (n=5, 8.3%) • Prednisolone tablets (n=2, 3.3%)

***Miscellaneous (i.e. drugs dispended in all pharmacies in small numbers):** Ferrous gluconate, folic acid, multivitamins, allopurinol, mouth washes, topical preparations (e.g. hydrocortisone cream, diclofenac gel, antibiotics), analgesics (paracetamol, revacod®(paracetamol+codeine))

The average number of medications dispensed in each recruited pharmacy was 3.88 ± 2.60 (mean ± SD; Table 9). Analysis revealed that the number of dispensed medications in each recruited pharmacy significantly affects the way of interaction with patients ($p < 0.01$). The more medications dispensed, the less counseling provided to patients.

The Pharmacy Administration at JUH was asked about the average number of prescriptions per pharmacy during the month of conducting the observational part (May 2011), in order to compare between the working load and the counseling techniques provided. Table 9, illustrates the average number of prescriptions per pharmacy. The Emergency Department (ED) pharmacy had the fewest number of prescriptions and dispensed medications compared to the other pharmacies (Tables 9 and 10).

Table 9. Average number of prescriptions per pharmacy in May 2011 (per day) (Source: Administration of Pharmacy- JUH, 2011):

Pharmacy Dept.	Average number of prescriptions
Endocrinology	171
Pediatrics	188
Respiratory	237
Cardiac Center	174
Family Medicine	153
Emergency	140

Table 10.The number of dispensed medications in each pharmacy per ten observations in each pharmacy

Pharmacy	Number of dispensed medications
Endocrinology	31
Pediatrics	26
Respiratory	61
Cardiac Center	54
Family Medicine	37
Emergency	24

4.6. Pharmacy Practice Observations

During the stay of the researcher in the recruited pharmacies, she has taken down some qualitative notes regarding the general professional practice of the pharmacy staff. These were referred to in the thesis as 'pharmacy practice observations'. The main pharmacy practice observations during this part of the study included the following:

- Pharmacists were often too busy either by pricing, ordering or stocking orders to provide counseling to patients.
- Some pharmacists and assistants dispensed medications for two or three patients at one time.
- There was no private or even semi- private area for counseling in any of the observed pharmacies. The counters, in all pharmacies, were *"all in one"* counters for receiving the patients' prescriptions, dispensing and counseling at the same time.
- Labels with printed instructions were stuck on medications, mainly included the patient's name, the medication trade name, strength, prescribed dose, frequency and sometimes instructions related to meal (Appendix- 4). Labels printed for insulin did not include the desired dose and the pharmacy staff usually wrote it down manually.
- Sometimes, the printed labels did not contain any instructions except for the name of the patient, and the name and strength of medication.
- Poor physicians' handwriting was noted in many of the observed prescriptions.
- Some tablets were counted by the pharmacists/or assistants using a manual counting tray. Unfortunately, for that purpose, they count tablets using their bare hands or even pens.

- The same counting device was used several times without even being cleaned before re-use to count another medication, which may have contributed to cross-contamination.
- No expiry dates were written on the manually counted tablets, which were dispensed in separate bags (not the original packet).
- Some tablets were counted and filled in separate bags in advance, in order to save time during preparing the prescriptions, without any labeling information even the medication name. This also could be a source of dispensing errors.
- Some tablet-containers were arranged near to each other on the dispensing counter, some of which were *look-alikes* and could be a risk for dispensing errors (e.g. Warfarin (2mg, 3mg, 5mg), Digoxin (0.125 mg, 0.250 mg) and Levothyroxine (50 mcg, 100 mcg).
- The duration of antibiotics use was rarely written down on the label for patients.
- The pharmacies were not noted to be crowded with patients during all working hours. However, the researcher noticed that even at quite times, still no counseling was provided to patients.

CHAPTER FIVE

DISCUSSION

PART I: OBSERVATIONAL STUDY

5.1. Counseling Process and interaction behavior

The overall aim of the observational part of the study was to evaluate the counselling process provided by a sample of teaching hospital pharmacists at JUH in Amman. The main concern of the study was to evaluate the performance of pharmacists, however, it was inevitable to include pharmacy assistants in the study for two reasons: (1) A good percentage of interactions with patients in pharmacies in Jordan is usually conducted by assistants (i.e., n=18, 30%) (Al-Wazaify and Albsoul-Younes, 2005), (2) for comparison purposes (e.g. who mainly does the counseling about medications part (if any) at JUH and how do pharmacy assistants contribute in counseling (if any), etc.
This part explored 60 patient-pharmacist/assistant interactions to evaluate counseling behavior and content in 6 different outpatient pharmacies. Analytical statistics were used to examine any potential relationship that may exist between counseling behavior, content and some variables like type of pharmacy department, number of medications dispensed and number of pharmacy staff.

5.1.1. Initiation of the patient-pharmacist interaction:

This study was conducted in hospital outpatient pharmacies where people in most cases attend to get their prescriptions dispensed rather than to ask the pharmacist for a consultation, as is the case in the community pharmacy (Puspitasari, *et al.,* 2009).
In the present study, the pharmacy staff and the patients seemed to be equally initiating the counseling if existed. The patient was the frequent initiator (n=8, 13.3%) of the

observed counseling process (if exists) in 5 of the recruited pharmacies, except the Emergency pharmacy. In the Emergency pharmacy, the pharmacist in all cases (n=10, 16.7%) was the initiator to counsel the patient about the medications. The question of who is the initiator of counseling in the pharmacies is of great importance. The pharmacists seemed to be the initiator for counseling only in the emergency pharmacy. This can be explained by the fact that almost all medications are of newly diagnosed diseases, acute conditions or exacerbations (Hugtenburg, *et al*., 2004; van Hulten, *et al,* 2011). Also, fewer medications dispensed per patient can be an explanation for the providing counseling to all the observed patients in the Emergency pharmacy. On the other hand, patients' initiation of counseling in the other pharmacies was higher for newly prescribed medications especially in the pediatrics and family medicine departments.

One US study showed that pharmacists judged the importance of counseling patients depending on their familiarity with the medications; they assumed that patients were less knowledgeable of new medications than refills (Schommer, *et al,* 1994). However, in a study done by Gordon *et al*, (2007) in the United Kingdom community pharmacies revealed that patients taking regular medications do not always understand how to use their medications properly. It indicated that out of 98 patients with chronic conditions, 28 had poor understanding of the use of their regular medications. Patients in this study reported that doctors had used incomprehensible medical terms (Gordon, *et al.,* 2007). However, they appreciate the pharmacy services in particular to be the best to suit their needs. Therefore, it is the pharmacist's role to ensure better patient understanding of his/her medications.

In other recent studies, it has been shown that pharmacists may have problems in communication with patients, the fact that may affect the information provided

(Airaksinen, *et al.,* 1998). In our recent study, the identity of the dispenser (i.e., whether a pharmacist or an assistant) did not affect the initiation of counseling session.

This could be due to the heavy working load or lack of knowledge and communication skills for both pharmacists and assistants. On the other hand, looking at the brighter side, it may be due to the motivation to counsel patients that is present equally in both pharmacists and assistants.

Moreover, it has been shown in some studies that patients rarely or never ask actively about their medication. This may be because patients are either uncertain that they need to do that or uneducated enough to know the relevant questions about their medications (Blom AG, *et al.,* 1989; Kessler, 1991).

5.1.2. Techniques of counseling and interaction:

The results showed that the type of outpatient pharmacy department affected the way of interacting with patients. In the five pharmacies included in the study (i.e. endocrinology, cardiac center, respiratory, pediatrics, family medicine) the medications were simply handed to patients (with no counseling) except in few cases. That may be a result of patients' turnover rate in each pharmacy and/or number of total pharmacy staff. It has been clarified, by seeing the monthly statistics of the number of dispensed prescriptions in all recruited pharmacies, that patients' turnover in the Respiratory pharmacy was the highest during the month of conducting the study. This may explain the reason of handling patients their medications in all the observed cases without any counseling. Also, the number of Respiratory pharmacy's staff appears to be equal to the other pharmacies sections, despite the workload compared to the other pharmacies. Moreover, the total number of pharmacy staff (pharmacists and assistants) played an important role in determining the way of providing information. Results revealed that

the majority (n=42, 70%) of the pharmacists and assistants used written instructions to provide information to their patients about their medications. In contrast, the emergency pharmacist provided the highest rate of both verbal and written counseling. This could be either due to personal factors of the working pharmacist herself (e.g. Knowledgeable and has proper communication skills to deal and contact with patients), in addition to relatively few number of patients presented at the emergency department pharmacy, during the observing days, the fact that allows sometime between patients to provide counseling (not crowded) and finally the lower number of medications dispensed compared to other participating pharmacies, as noted in the “Results Chapter”.

The type of information provided to patients was "written only" in 70% of the cases and in the remaining 30% were both "written and verbal" information. For literate patients, written information has been shown to reinforce verbal instruction (Dyck, *et al*, 2005). It gives the patient tangible information to refer to in case he/she forgets what the pharmacist had said. In addition, it can be used to promote more effective counseling. Moreover, written information (e.g., brochures indicating administration techniques for insulin or inhalers) may be given to patients to look over while their prescription is being filled. One study conducted by Savas, *et al.,* (2001), to evaluate the effectiveness of written information in improving the knowledge of the under-educated patients about the side effects of NSAIDs and to evaluate the compliance of patients with and without the written information materials. Thirty patients received only verbal information, 38 patients received only written and 40 patients received both verbal and written information. The patients' knowledge was assessed afterwards. It was found that higher number of correct answers was obtained from patients who received both verbal and written information than other groups. On the other hand, written information group scored better than verbal information only group (p= 0.02). Therefore, providing written

material is essential in combination with the verbal information especially in under-educated and in elderly patients.

Moreover, labels printed in the observed pharmacies did not include enough information to rely on especially that no verbal information had been provided. According to the Pharmaceutical Society of Australia (2006), labels must be clearly printed, legible and include the name of the patient; date of dispensing, the name, telephone number and address of the pharmacy, directions for correct use of the medication; name of prescriber; and the expiry date and or, directions for storage of medicines where appropriate; and any other information that may be required. Appropriate cautionary and advisory labels must be applied. Labels should be placed on containers of dispensed medicines in such a way that the manufacturer's information is not hidden.

5.2. Contents of patient counseling:

In the current study, almost all the information (n=42, 70 %) provided to patients was written. Written information provided by the pharmacy staff included; name of the medication, strength, dose to be taken, frequency and rarely the duration of use (e.g., antibiotics). The verbal counseling (if existed) was limited to stating the dose, frequency, indication, duration, route of administration (e.g. eye or ear drops, Inhalers, nasal sprays), explaining generic substitutions, common side effects, to refill or not and self-monitoring during therapy. No verbal or written information was provided on special precautions, expectations of the drug (positive and negative) or action to take when dose has been missed. No questions were asked to the patients related to drug or food allergies, or even verifying their knowledge about medications. Several studies indicated that written information can be effective in improving patient compliance with therapeutic regimens i.e., antibiotics for example. However, for drugs used on a long-

term basis, written information has not been shown to be sufficient for improving patient compliance (Morris & Halperin, 1979). On the other hand, patient knowledge of less commonly known information, such as precautions or special directions has been shown to be frequently improved by written information (Morris & Halperin, 1979). These findings were similar to what has been found by Sleath (1996), who investigated the nature of pharmacist-patient relationships in community pharmacies in New Mexico/USA by conducting an observational study on a total of 344 pharmacist-patient interactions. He found that pharmacists offered to counsel all patients about their new and refill prescriptions. Even if pharmacists did interact with patients, pharmacists asked patients close- ended questions related to drug therapy. In that same study, Sleath noticed that close-ended questions reduced the patient's degree of openness and caused the patient to become more passive during the interviewing process. Open-ended questions are harder to formulate than close ended questions but they are more crucial in decreasing the patient's defensiveness by conveying a willingness to listen (Beardsley, *et al.*, 2007).

Also, the pharmacist should focus on the patient's needs by first listening actively, and then confirming that the patient's most urgent drug-related needs had been understood correctly (Montgomery, *et al.*, 2010).

According to the ASHP (1997), the pharmacist must verify patients' knowledge and understanding of medication use by asking the patients to describe or show how they will use their medications, identify their effects and observe patients' medication-use capability, accuracy and attitudes toward following their therapeutic regimens and monitoring plans. Telling patients the name of their medication helps them in identifying it. Stating the indication reinforces the diagnosis and creates confidence in the appropriateness of the therapy. While the route of administration often seems

obvious, pharmacists sometimes encounter cases of patients taking a medication by the wrong route (e.g. swallow a suppository or effervescent tablet) (Williams, 2007; Hughes, *et al.*, 2008). It should not be assumed that printing this information on the label will cover these points. Many patients cannot read, and those who can read often do not. Patients should be told the dosage regimen in order to either reinforce what the doctor instructed or inform them for the first time. While a particular dosage regimen may seem straight forward or obvious, it may be interpreted incorrectly. For example, not everyone eats three meals a day. Patients with diabetes may eat six or seven mini-meals each day. Therefore, directions that state "Take one tablet after meals and at bedtime" may prompt some patients to take their medications more than the intended three times.

Effective counseling helps patients understand the extent of the risk they are taking by using a medication. It is possible that some patients are not interested in knowing about any side effects, and some do want to know all possible side effects. Pharmacists must develop a flexible approach to the dissemination of information and discussion of special precautions (e.g., activities or food to avoid) and beneficial activities (e.g., exercise, decreased salt intake, diet, self-monitoring). By no means should it be presumed that the physician has discussed these therapeutic issues with the patient (Berger, *et al.*, 2005). The patients must be asked about what they have been told, and discuss it and/or fill in the gaps if necessary. Generally, patients are not aware that other medications, foods, or diseases may interfere with the drug they are taking or affect the condition for which they are being treated (Care Quality Commission National Report, 2009). Also, the storage recommendations must be discussed with the patients. Many patients still store their medications at room temperature, when it needs to be stored in the refrigerator (Arshad, *et al*, 2011).

5.3. Duration of Interaction and/or Counseling:

It is essential to invest an appropriate amount of time in proper counseling in order to achieve improved patient understanding and consequently therapeutic outcome (Cipolle, *et al.,* 2004). The amount of time spent generally depends on factors such as a patient's interest, the number of medications, the seriousness of the patient's condition, and the pharmacist's work schedule (Raisch, 1993). It is also necessary to spend more time counseling certain patient groups, such as those who need multiple drugs (poly-pharmacy), those who have complicated drug regimens (i.e., because of co-morbidity), and the elderly (Palaian, *et al*., 2006). However, in the present study, the researcher did not select special patients' interactions (i.e., patients with multiple medications or special age group) to observe, rather the recruitment of cases was consecutive. The average mean time spent in counseling (i.e., communication with the pharmacist (or assistant) and the patient regarding education about the medications) in seconds was 49.40 ± 34.329. In the Sleath study (1996), he reported that pharmacists were significantly more likely to use a participatory style (i.e. take into account the patient's opinion, feeling, satisfaction on any provided information) with older patients and with patients who were picking up refill prescriptions. The average length of pharmacist-patient interaction was just less than 2 min (114 s). Pharmacist-patient interactions were significantly longer if: (1) pharmacists used more of a participatory approach (i.e., patient centered care) in pharmacist-patient interaction and (2) if pharmacists gave more drug information to patients. In the current study, the pharmacists and assistants counseled patients only if they started to ask about their medications (i.e. reactive), except in emergency pharmacy the pharmacist initiated counseling (i.e. proactive) while she was writing instructions on the medication packets. The average time of counseling in this pharmacy was about 49.5 seconds (less than one minute), whereas in the other

pharmacies the average time of counseling was about 10 seconds. The lack of interactions between patients and pharmacists could be due to environmental factors i.e., more pharmacists interaction if less people were waiting nearby.

In this study, more counseling time was spent on new medications compared to refills. That can be due to the pharmacists/assistants expectations that the patients already understand all their chronic medications because they had been using it for a long period of time.

The time of counseling spent by the pharmacy staff was not significantly affected by the number of medications dispensed. Rather, it depended on the type of pharmacy staff interacting with the patient and if the patient understanding his/her medications (i.e. refills). In addition, it is the type rather than the number of medications that may have played role in the duration of counselling offered to patients. Whereas some medications (e.g. with narrow therapeutic index like digoxin and warfarin or special administration precautions like alendronate) need significant time spent in patient education, we found some other medications like simple analgesics (e.g. paracetamol) with straight forward dispensing procedures. For example, patients using warfarin should be counselled to have stable diet and not to add any medications without pharmacists' or physicians' consultations, because it may influence the patient's response to warfarin. Patients must eat a normal, balanced diet maintaining a consistent amount of vitamin K. Avoid drastic changes in dietary habits, such as eating large amounts of green leafy vegetables (Drug Information Handbook, 2010). Also, patients using alendronate must be educated about the techniques for administrating it. To facilitate delivery to the stomach and thus reduce the potential for esophageal irritation, patients should take the drug with plenty of water and should not lie down for at least 30 minutes and until after their first food of the day (Drug Information Handbook, 2010).

Such precautions are very important and it is the pharmacist's role to ensure patients' understanding.

5.4. Pharmacist vs. assistant counselling:

Pharmacists and pharmacy assistants are thought to be in a unique position to support patients' on their medicines through the application of knowledge and skills (Benrimoj, *et al.,* 2008). As stated previously in the methodology, it was not possible for the researcher to observe pharmacists only during the study. Moreover, for comparison purposes, it was thought that the quantity and quality of counseling conducted by pharmacy assistants (if any) should be evaluated.

In the recent study, counseling if available, was conducted by pharmacists in the majority of cases (n= 18/19) while only one case of counseling was done by assistants (n= 1/19).

Although assistants are essential members of the pharmacy team, up to the researcher's knowledge, there were no studies in the reviewed literature, to compare between pharmacists and assistants' interaction and counseling behavior. It is important to point out that pharmacy assistants are usually required to function under the supervision of a licensed pharmacist and to help in activities that do not require the judgment and skills of the 5 or 6 years of pharmacy profession training (e.g. dealing with narrow therapeutic index or controlled drugs, special counseling on drugs of abuse, private issues like sexual health etc; Myers, 2011). On the other hand, the pharmacist role in Jordan had been extended lately to focus more on the individual patient and assume a degree of responsibility for the care of that patient as it relates to medication use (Albsoul-Younes, *et al*., 2010).

Pharmacists did the majority of counseling (*p*= 0.002) and as stated previously, the pharmacists and assistants in the JUH pharmacies are almost equal (n= 32 pharmacist and 29 assistants). This means that the number of assistants does not always affect their willingness to interact directly with patients.

5.5. Drugs dispensed during the study:

The average number of dispensed medications in the 6 pharmacies included in this part of the study was 3.88 medications per patient. The most frequently dispensed medications in all the 6 pharmacies were atorvastatin (in Endocrinology Pharmacy), anti-pyretic (Pediatrics Pharmacy), Symbicort® (budesonide and formoterol) turbohaler(Respiratory Pharmacy), antihypertensivedrugs (e.g. calcium channel blocker, angiotensin converting enzyme inhibitors angiotensin receptor blockers, Diuretics, beta- blockers) (Cardiac Centre Pharmacy), antihistamine drugs (Loratidine, Actifed® (pseudoephedrine and triprolidine)) (Family Medicine Pharmacy), antibiotics (amoxicillin clavulanate, cefuroxime, levofloxacin, metronidazole) (Emergency Pharmacy).

In addition to the main objectives that had been stated previously, this study scanned the most commonly dispensed drugs in each pharmacy, in order to use this list as a guide in training pharmacists on counseling patients with a focus on the most commonly dispensed drugs in each pharmacy. Also, it has been noticed that printed labels of dispensed medications at JUH mainly include the patient's name, the medication trade name, strength, prescribed dose, frequency and sometimes instructions related to administration with regard to meal time. Appendix-5 illustrates some examples of JUH labels. Figure 1 Shows an ideal medication label requirements (it must include prescription number, the prescriber's name, his phone number and the pharmacy name

and phone number in case of any needed information or clarification). The patient name, the medication name, strength and the dosage form. The quantity and the expiry date must be stated clearly on the package (Davis, *et al.,* 2006). Instructions of usage must be stated clearly with verbal explanation if needed.

Also brightly colored warning labels with additional information such as:

- Safe storage instructions, such as “keep refrigerated”
- Instructions for use, such as “shake well before using”
- Possible side effects, such as “may cause drowsiness”

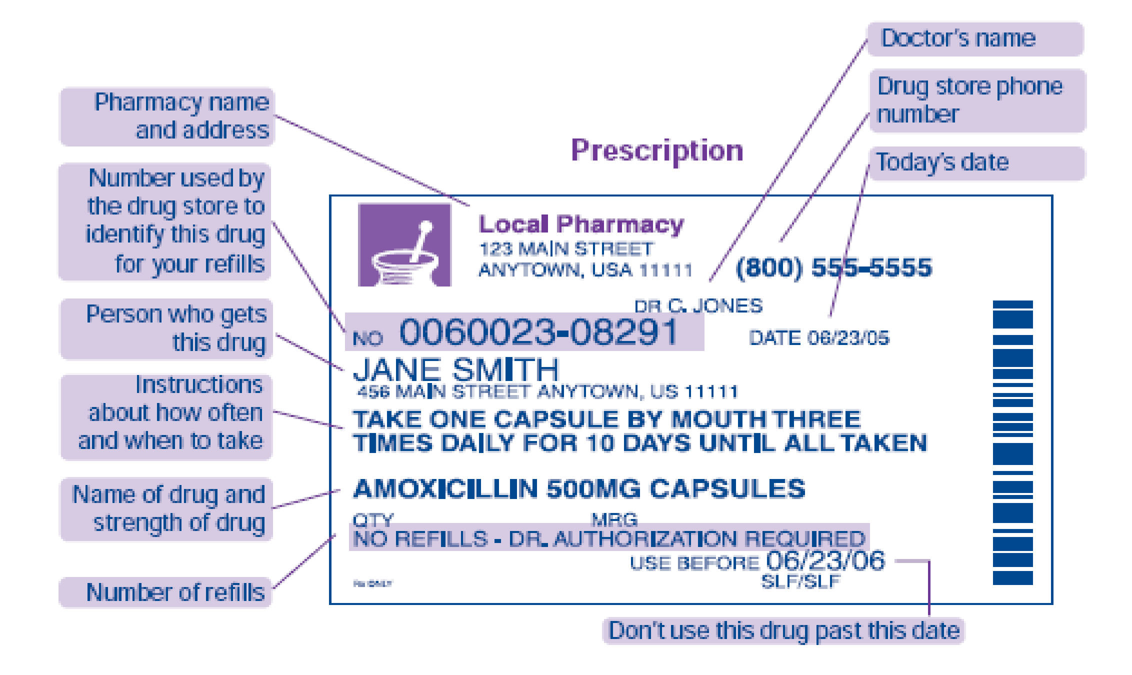


Figure 1. Ideal Printed Label for pharmacy dispensed medication according to United States instructions (from Davis, *et al*., 2006).

CHAPTER SIX

RESULTS

PART II: QUESTIONNAIRE STUDY:

Evaluation of the JUH pharmacies' staff Perception on their Counseling behavior and Content

6.1. Sample size and response rate

A total of 47 questionnaires were returned out of the 61 questionnaires that were distributed to all pharmacy staff working at JUH (inpatient, outpatient and administrative).This resulted in a response rate of 83%. It was completed by 30/ 32 (94%) pharmacists and 17/ 29 (59%) assistants. Seventeen percent of the total pharmacy staff refused to participate in the study (n= 2 (6%) pharmacists, n=12 (41%) assistants). They stated that they were not interested in the study or had no time to completely fill in the questionnaire and some assistants were not fluent in English, which was the questionnaire's language.

6.2. Demographic characteristics of participants:

The analysis indicated that (n=30, 64%) of participants were pharmacists and (n=17, 36%) were pharmacy assistants. Of the responding pharmacists, (n=9, 30%) were male and (n=21, 70 %) were female. More than 3 quarters of the pharmacists (n=24, 80 %) were between 25- 34 years of age. The majority of the participating pharmacists (n= 27, 90%) had completed a Bachelor of Pharmacy degree as the highest degree obtained and 10 % (n=3) obtained Master degree were working in the pharmacy administration. On the other hand, of the participating assistants (n=17), 41% (n=7) were male and 59% (n=10) were female. About 41% (n= 7) were of age between 25-34 years. Fifteen of the

total assistants' number (88.2 %) had Diplomas and 11.8 % had Bachelor's degree in addition to the diplomas degrees in another field. One assistant had specified to have it in chemistry, the other 1 did not specify. Table 11 summarizes the demographic data of participants and table no. 12 summarizes the professional experiences of the participants.

Table 11: Demographic details of participating pharmacy staff (n= 47).

Characteristic	Pharmacists N (%)	Pharmacy Assistants N (%)
Total (%)	30 (63.8)	17 (36.2)
Gender		
Male	9 (30.0)	7 (41.2)
Female	21 (70.0)	10 (58.8)
Age		
18-24 years	1 (10.6)	4 (23.5)
25-34 years	24 (66.0)	7 (41.2)
35-44 years	4(10.6)	1 (5.9)
45-54 years	1 (10.6)	4 (23.5)
55-64 years	0 (0.0)	1 (5.9)
Highest degree		
Diploma	0	15 (88.2)
Bachelor's	27 (90.0)	2 (11.8)
Master	3 (10.0)	0 (0.0)
Country where last degree obtained		
Jordan	28 (93.3)	17 (100.0)
Others	2 (6.7)	0 (0.0)
Language of studying		
English	29 (96.7)	9 (52.9)
Arabic	1 (3.3)	8 (47.1)

Table 12: Professional experience of the pharmacy staff (n= 47).

Characteristic	Pharmacists N (%)	Pharmacy Assistants N (%)
Hours of Working per week		
< 40 hour	8 (26.7)	1 (5.9)
40- 50 hour	19 (63.3)	13 (76.6)
50-60 hour	3 (10.0)	3 (17.7)
Experience		
<1 year	1 (3.3)	1 (5.9)
1 to < 6years	17 (56.7)	7 (41.2)
6-10 years	7 (23.3)	3 (17.6)
>10 years	5 (16.7)	6 (35.3)

Worked in another Place Before JUH		
Yes	21 (70.0)	9 (52.9)
No	9 (30.0)	8 (47.1)
Current Setting		
Non-Administrative:		
In-patient	8 (26.7)	5 (29.4)
Out-patient	17 (56.7)	12 (70.6)
Administrative	5 (16.7)	0 (0.00)
Average Prescriptions per day		
0	1 (3.3)	3 (17.6)
1 to Less than 100	5 (16.7)	6 (35.3)
100- 299	23 (76.7)	7 (41.2)
300 – 499	1 (3.3)	0 (0.0)
500- 699	0 (0.0)	1 (5.9)

6.3. Participants self-perception of their counseling behavior and content

Almost half (n= 23, 48.9%) of the total pharmacists and assistants participating in the study reported that they do sometimes counsel patients verbally about the administration of their medications and 46.8% (n= 22) said that they never provide information on lifestyle modifications to their patients. Also, more than one third of participants (n=17, 36.2 %) said that they do provide counseling to nurses about the storage and preparation of medications. Asking about the type of counseling provided to patients, more than half (n=27, 57.4 %) stated that they do provide both written and verbal information, Almost one third (n= 14, 29.8 %) reported that they provide only written information and 12.8 % (n= 6) reported providing only verbal information. Participants reported that there is almost equality in initiating the counseling process between the pharmacy staff and the patient (44.7% and 38.3 %, respectively). None of the participants reported that counseling was “never” initiated by them or patients. By using chi-square test, there was no significant relationship between initiating counseling and either being a pharmacist or assistant (p= 0.28).

Out of the 47 participants, 20 (42.6%) stated that they usually counsel patients on new medications, whereas more than half (n= 25, 53.2%) mentioned that they do provide counseling on both new medications and refills. Two out of three participants (n= 32, 68%) said that they normally provided counseling in a public area, 23.4% (n= 11) would do that in semi-private area (e.g., special window for counseling purposes, that only the patient and the pharmacy staff can talk freely without disruption by other patients), 3 (6.4%) of the participants reported they do counseling in private area and only one participant (a pharmacist) stated that it depends on the medication type (n= 2.1 %). She explained more that for example gynecology, psychiatrics and psychology medications need privacy for counseling.

Table 13 summarizes the self-perception of pharmacists and pharmacy assistants regarding their counseling contents and behavior.

Table 13.Self-perception of pharmacy staff (both pharmacists and assistants) at JUH regarding their counseling behavior and contents

Behavior of Counseling	**Frequency (n)**	**Percentage (%)**
Counseling Patients about Medication Administration		
Always	17	36.2
Often	5	10.6
Sometimes	23	48.9
Rarely	1	2.1
Never	1	2.1
Counseling Patients about Modification of Lifestyle		
Always	3	6.4
Often	4	8.5
Sometimes	17	36.2
Rarely	1	2.1
Never	22	46.8
Counseling Nurses about Medication Storage and Preparation		
Always	15	31.9
Often	2	4.3
Sometimes	17	36.2
Rarely	2	4.3
Never	5	10.6
Question was not answered because they don’t work in in-patient setting	6	12.8

Techniques of Providing Counseling		
Verbal	6	12.8
Written	14	29.8
Both	27	57.4
Pharmacist/ Assistant Initiates Interaction		
Always	3	6.4
Often	14	29.8
Sometimes	21	44.7
Rarely	9	19.1
Never	0	0.0
Patient Initiates Counseling		
Always	9	19.1
Often	14	29.8
Sometimes	18	38.3
Rarely	6	12.8
Never	0	0.0
Counseling Provided For		
New medications	20	42.6
Refills	2	4.3
Both	25	53.2
Area of Counseling		
Public area	32	68.1
Private	3	6.4
Semi private	11	23.4
Depends on the medication	1	2.1

A chi-square analysis revealed that although no significant relationship was found between the staff and the techniques of counseling (i.e., verbal and/ or written) ($p > 0.05$). On the other hand, there was a significant relationship between either pharmacists or assistants in providing counseling about lifestyle modifications, storage and preparation of medications, and providing counseling to either new, refill or both prescriptions collected ($p < 0.05$). Pharmacists provided higher rates of the overall counseling items (n=30, 64%) than assistants 36% (n=17). On the other hand, staff age, the previous experience and duration of counseling process were not found to be statistically significant factors ($p > 0.05$) in patient counseling on either medications, lifestyle or even storage and preparation to nurses. More females (n=31) reported to provide both verbal and written counseling and on both new and refill prescriptions

compared to males (n=16), yet this was not found to be statistically significant ($p >$ 0.05). The setting of pharmacy i.e., inpatient or out-patient did not appear to be significantly affecting the counseling behavior and content on medications, lifestyle, storage and preparation, and the techniques of counseling provided as stated in Table 14.

Table 14. Relationship between pharmacies setting and counseling using Chi-square test:

Counseling Process	*P* value[1]	Chi-square	d.f.[2]
Counseling on Medications	0.84	6.344	8
Counseling on Lifestyle	0.20	12.251	8
Counseling on Storage & Preparation	0.70	10.614	10
Techniques of counseling	0.84	8.777	4

[1] Degree of Significance
[2]Degree of Freedom

However, it seemed that pharmacy staff with Bachelor's degree provided more counseling (n= 28 (59.5 %) out of the total 47 participants) than staff with Diploma or Master. The last degree obtained significantly affected counseling on lifestyle (p= 0.03) and nurses' counseling on medications administration and storage (p = 0.02), but it does not significantly affect counseling on medications (p= 0.77).

The average working hours per week was 45.15 ± 4.139 hours (mean ± SD). The working hours per week did not significantly affect counseling on medications (p= 0.23, lifestyle modifications (p= 0.70), counseling nurses about storage and preparation (p= 0.28) and the technique of counseling (verbally, written or both; p= 0.77).

6.4. Provision of Counseling

6.4.1. Verbal counseling on new and refill medications:

In terms of providing information, participants reported that both types of information were more frequently provided when counseling on new compared to regular (refill)

medications (Table 15). The table shows that there was a marked difference in providing information on new or refill prescriptions. More than 50% of the participants reported to provide both verbal and written information on newly prescribed and refill medications equally. Also, Tables 16 and 17 summarized the likelihood of pharmacy staff to provide verbal information based on 13 different counseling elements on both new and refill prescriptions. Majority of participants reported to counsel patients on new medications about the indication, dose, route of administration, if to refill or not and explaining generic substitutions. And regarding refill medications the majority stated to counsel regarding the dose and frequency. Chi-Square revealed that no significant relationship (p= 0.05) between providing verbal counseling on new or refill prescriptions.

Table 15: Number and percentage of participants vs. type of information and prescriptions mostly counseled by/ on:

Type of information provided	
Verbal	6 (12.8 %)
Written	14 (29.8 %)
Both	27 (57.4 %)
Type of Prescriptions	
New	20 (42.6 %)
Refill	2 (4.3 %)
Both	25 (53.2 %)

Table 16. Pharmacy staff estimation of their provision of counseling for patients with newly prescribed medication (n=47):

Self- Estimation of :	**100% of cases (n)**	**75% of cases (n)**	**50% of cases (n)**	**25% of cases (n)**	**Never % (n)**
Providing verbal counseling	17.0 (8)	29.8 (14)	25.5 (12)	23.4 (11)	4.3 (2)
Providing written information	27.7 (13)	38.3 (18)	17 (8)	14.9 (7)	2.1 (1)
Counsel on:					
Indication	55.3 (26)	23.4 (11)	12.8 (6)	6.4 (3)	2.1 (1)
Dose	46.8 (22)	19.1 (9)	19.1 (9)	10.6 (5)	4.3 (2)
Route of Administration	46.8 (22)	25.5 (12)	17.0 (8)	10.6 (5)	0

Frequency & duration	23.4 (11)	27.7 (13)	25.5 (12)	23.4 (11)	0
Special directions for preparation, storage or administration	19.1 (9)	21.3 (10)	23.4 (11)	21.3 (10)	14.9 (7)
Expectations of the drug used; effectiveness	10.6 (5)	27.7 (13)	17.0 (8)	25.5 (12)	19.1 (9)
Common Side effects	8.5 (4)	12.8 (6)	19.1 (9)	51.1 (24)	8.5 (4)
Techniques for self monitoring of drug therapy	2.1 (1)	19.1 (9)	19.1 (9)	31.9 (15)	27.7 (13)
Special precautions while using the drug e.g. sun exposure	17.0 (8)	17.0 (8)	14.9 (7)	31.9 (15)	19.1 (9)
If there is refill or not	31.9 (15)	19.1 (9)	23.4 (11)	25.5 (12)	0
What to do if they missed a dose	6.4 (3)	14.9 (7)	10.6 (5)	36.2 (17)	31.9 (15)
Explain the availability of generic substitutions	31.9 (15)	17.0 (8)	29.8 (14)	17 (8)	4.3 (2)
Advices about life-style modification	6.4 (3)	17.0 (8)	14.9 (7)	34 (16)	27.7 (13)

Table 17. Pharmacy staff estimation of their provision on counseling for patients with refill medication (n=47)

Self- Estimation of :	**100% of cases (n)**	**75% of cases (n)**	**50% of cases (n)**	**25% of cases (n)**	**Never % (n)**
Providing verbal counseling	8.5 (4)	12.8 (6)	31.9 (15)	40.4 (19)	6.4 (3)
Providing written information	87.2 (41)	12.8 (6)	0	0	0
Counsel on					
Indication	8.5 (4)	17.0 (8)	38.3 (18)	29.8 (14)	6.4 (3)
Dose	31.9 (15)	12.8 (6)	29.8 (14)	23.4 (11)	2.1 (1)
Route of Administration	27.7 (13)	8.5 (4)	31.9 (15)	25.5 (12)	6.4 (3)
Frequency & Duration	31.9 (15)	8.5 (4)	29.8 (14)	23.4 (11)	6.4 (3)
Special directions for preparation, storage or administration	8.5 (4)	17.0 (8)	19.1 (9)	40.4 (19)	14.9 (7)
Expectations of the drug used; effectiveness	2.1 (1)	8.5 (4)	23.4 (11)	46.8 (22)	21.3 (9)
Common Side effects	4.3 (2)	8.5 (4)	17.0 (8)	48.9 (23)	21.3 (9)
Techniques for self monitoring of drug therapy	4.3 (2)	8.5 (4)	17 (8)	51.1 (24)	19.1 (9)

Special precautions while using the drug e.g. sun exposure	2.1 (1)	6.4 (3)	23.4 (11)	38.3 (18)	29.8 (14)
If there is refill or not	10.6 (5)	10.6 (5)	10.6 (5)	48.9 (23)	19.1 (9)
What to do if they missed a dose	21.3 (10)	14.9 (7)	34.0 (16)	19.1 (9)	10.6 (5)
Explain the availability of generic substitutions	4.3 (2)	12.8 (6)	17.0 (8)	25.5 (12)	40.4 (19)
Advices about life-style modification	2.1 (1)	17.0 (8)	8.5 (4)	34.0 (16)	38.3 (18)

6.4.2. Written information on newly prescribed and refill medications:

All participants reported using written information to provide information for new medications 100% (n=47), while 87.2 % (n= 41) of the participants stated to provide written information on refill medications while 13% (n=6) of them do not.

Chi-square test revealed that there was no significant relationship between providing written information on new and refill medications ($p > 0.05$). On the other hand, the setting of being working either in out- or in-patient significantly affected this behavior ($p < 0.05$). Expectantly, providing written information seemed to be higher in the out-patient than in-patient setting.

Counseling on either new, refill or both types of medications was significantly related ($p < 0.05$) to the job description (pharmacist or assistant) as shown in Figure 2.

Moreover, pharmacists reported to provide verbal and written information to patients more frequently than assistants did (Fig.3). Yet, this finding was not statistically significant ($p > 0.05$).

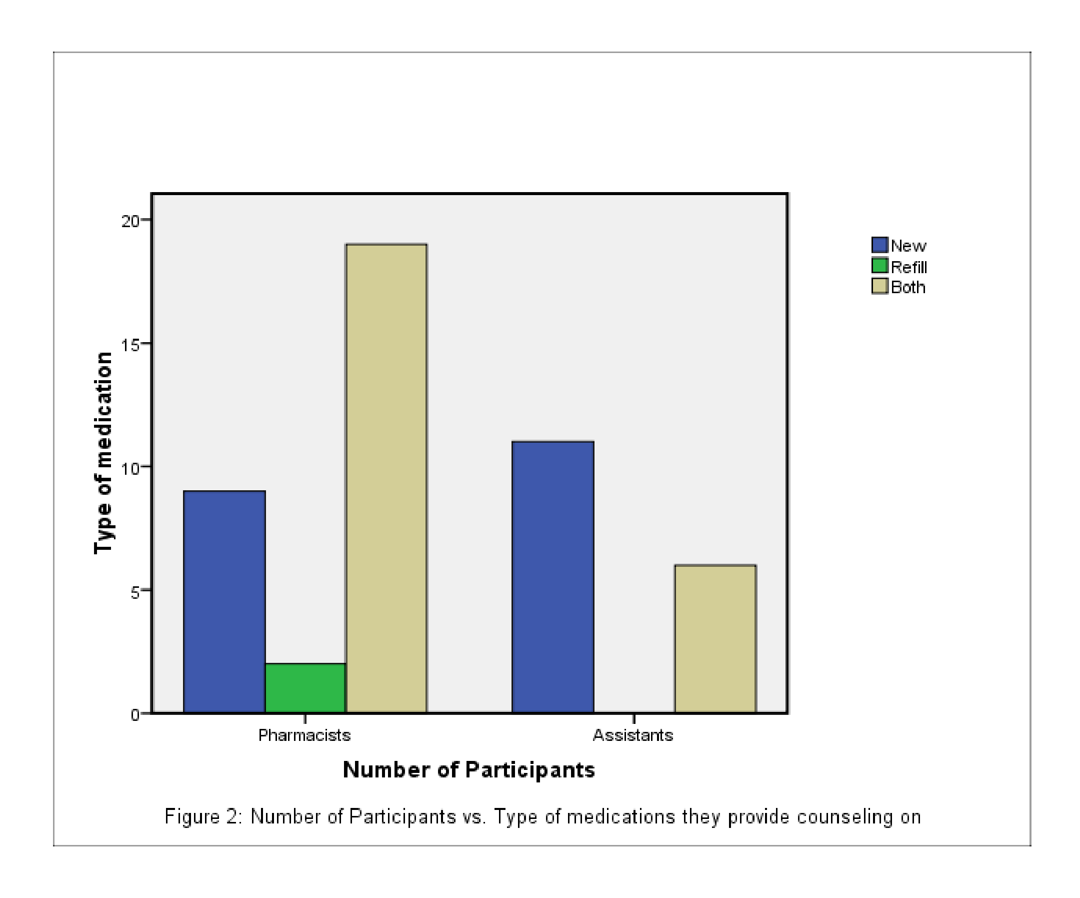


Figure 2: Number of Participants vs. Type of medications they provide counseling on

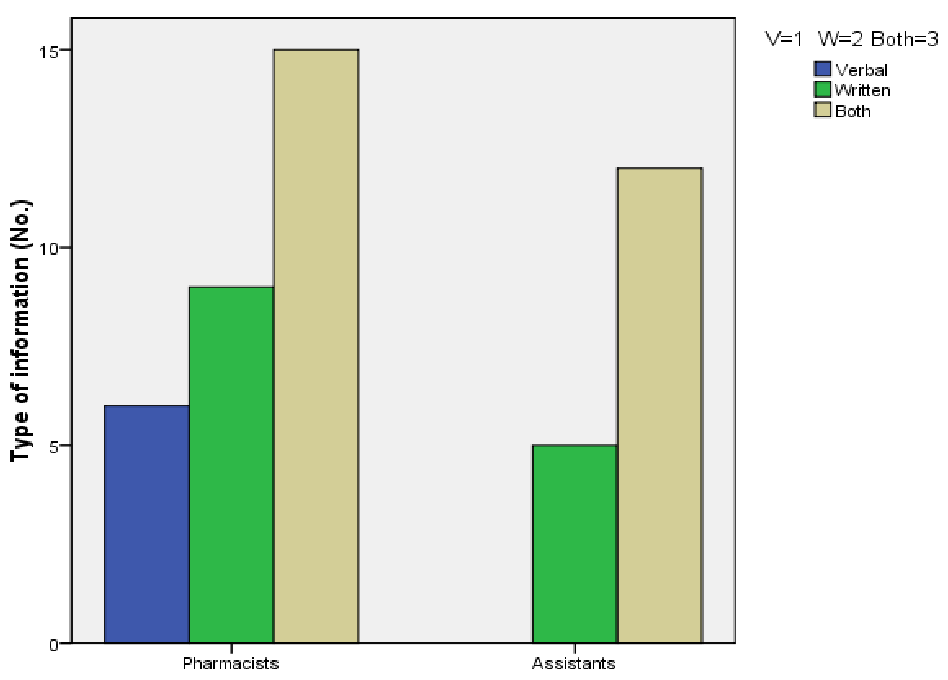


Figure 3. Number of participants vs. Type of information provided

6.4.3. Initiation of counseling episode

Table 18 illustrates information regarding pharmacists/assistants vs. patients as initiators of counseling for each of them on a scale as had been applied on the survey.

Table 18.Percentage of Pharmacists/ Assistants as initiators of counseling (n)

	Always	Often	Sometimes	Rarely	Never
Pharmacists (n=30)	10.0 (3)	30.0 (9)	43.3 (13)	16.7 (5)	0.0
Patient initiates counseling as pharmacists answered	20.0 (6)	43.3 (13)	23.3 (7)	13.3 (4)	0.0
Assistants (n=17)	0.0	29.4 (5)	47.1 (8)	23.5 (4)	0.0
Patient initiates assistants answered	17.6 (3)	5.9 (1)	64.7 (11)	11.8 (2)	0.0

6.4.4. Duration of counseling

According to participating staff (pharmacists and assistants), 42.6% (n=20) and 53.2% (n=25) of the counseling episodes for new and refill medications, respectively lasted for less than 1 minute. Table 19 summarizes participants' answers regarding their reported duration of time for providing counseling for new and refill medications.

Table 19: Reported duration of time (in minutes) for providing verbal counseling on new and refill medications for participants (Pharmacists and assistants= 47).

Average length of time spent in verbal counseling for all medications		
	New Medication % (n)	Refill Medication % (n)
No counseling (0 minute)	0.0	14.9 (7)
< 1 min	42.6 (20)	53.2 (25)
1 to < 2 minutes	36.2 (17)	0.0
2-5 minutes	17.0 (8)	23.4 (11)
More than 5 minutes	4.3(2)	6.4 (3)

The Chi-square analysis revealed that the counseling duration for both new and regular (refill) prescriptions were not significantly related to the gender, employment (pharmacist or assistants), setting (inpatient or outpatient), age, experience years, latest educational degree, and the place of the last degree obtained ($p > 0.05$).

6.4.5. Counseling on lifestyle modifications:

A little less than half of respondents (n=22, 47%) reported that in general they never counseled patients on lifestyle modifications. On asking about new and refill prescriptions, 34% (n=16) reported to counsel patients with new prescriptions on lifestyle modifications while 38 % (n=18) reported to never counsel patients with refill prescriptions. Pharmacists reported to counsel on lifestyle modifications significantly more than assistants did ($p < 0.05$)

6.5. Reported barriers by participating pharmacy staff for not providing enough information to patients

More than half of respondents (n=25, 53.2%) mentioned that the main barrier for not providing counseling to their patients was the heavy workload. Other barriers included "lack of staff" (n=16, 34%) and "lack of time" (n= 14, 29.8%). Table 20 presents data about the participants' perception of main barriers to provide counseling to their patients. The top five barriers that had been reported by the participants are listed below (in decreasing order from highest priority to lowest):

1) Working Load
2) Lack of Time and Lack of Staff, equally.
3) Patients knowing their medications
4) Lack of Physicians Support
5) Lack of staff information and communication skills.

Table 20. Percentage of barriers for providing verbal information as arranged by participants (n= 47):

The Barrier	**Percentage (number)**									
Order Mentioned	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**0***
Working Load	53.2 (27)	14.9 (7)	10.6 (5)	2.1 (1)	2.1 (1)	2.1 (1)	8.5 (4)	2.1 (1)	2.1 (1)	2.1 (1)
Lack of Time	23.4 (11)	29.8 (14)	25.5 (12)	6.4 (3)	2.1 (1)	2.1 (1)	0	2.1 (1)	8.5 (4)	0
Lack of Staff	14.9 (7)	29.8 (14)	34.0 (16)	6.4 (3)	2.1 (1)	2.1 (1)	4.3 (2)	6.4 (3)	0	0
Patients know their medications	0	8.5 (4)	8.5 (4)	29.8 (14)	12.8 (6)	17.0 (8)	8.5 (4)	2.1 (1)	8.5 (4)	4.3 (2)
Lack of Physician Support	2.1 (1)	0	2.1 (1)	19.1 (9)	31.9 (15)	21.3 (10)	12.8 (6)	6.4 (3)	0	4.3 (2)
Lack of Staff Knowledge	8.5 (4)	0	4.3 (2)	8.5 (4)	21.3 (10)	6.4 (3)	10.6 (5)	17.0 (8)	8.5 (4)	14.9 (7)
Lack of Communication Skills	2.1 (1)	4.3 (2)	8.5 (4)	4.3 (2)	8.5 (4)	14.9 (7)	19.1 (9)	17.0 (8)	4.3 (2)	17.0 (8)
Lack of Administrative Support	2.1 (1)	6.4 (3)	2.1 (1)	17.0 (8)	12.8 (6)	17.0 (8)	12.8 (6)	8.5 (4)	0	21.3 (10)
It is the Pharmacist responsibility not the Assistant**	0	8.5 (4)	6.4 (3)	6.4 (3)	2.1 (1)	4.3 (2)	0	12.8 (6)	23.4 (1)	36.2 (17)

*Zero means "option not chosen"
** The option was included by both pharmacists and assistants

CHAPTER SEVEN

DISCUSSION

PART II: QUESTIONNAIRE STUDY

This study is the first of its kind in Jordan to examine the pharmacy staff self-perception and attitudes towards patient counseling. One study conducted previously in Jordan examined general public's perception and attitudes about the pharmacists' (in community pharmacies) counseling on medications and the provision of pharmaceutical care. This study had concluded that the general public in Jordan do trust the pharmacist and his/her important role as a healthcare professional who provides good advice.. Also, they showed that over one third of those receiving other services than medicines in the pharmacy were willing to pay to get such service (Wazaify, *et al.,* 2008).

The overall aim of first part of the study was to investigate the nature and rates of verbal and written information provided mainly by pharmacists at JUH. The second objective was to determine the differences between the pharmacists' and pharmacy assistants' perception (if any) of their behavior in patient-counseling. Also, one of the main objectives was to compare between the self-reported and the observational parts of this study. This will provide an idea about how do JUH pharmacies staff self-evaluate their provision of care to patients and where the gaps that need to be filled exactly are.

Sixty one questionnaires were distributed by hand using *drop-and-pick* technique. There are advantages for such technique. First, personal contact with respondents permits maximum flexibility when initially explain the aims of the questionnaire, and again when administering reminders, which in turn may increase the response rate. Secondly, the potential respondent may feel under a greater compulsion to complete the

questionnaire (Walker, 1976). Also, it is less time consuming than other methods like interviews.

7.1. Counseling Behavior and Content

Provision of Counseling Behavior and Content:

More than 45% of the pharmacists and assistants participated in the study reported to counsel patients “sometimes” about their medication and “never” counseled about lifestyle modifications. They also reported to “sometimes” initiate counseling with patients (44.7%). These findings are somewhat lower than the findings of Puspitasari, *et al.* (2009) in Australia, who also used questionnaires to investigate the nature and rates of verbal and written information provided by Australian community pharmacists. Their findings were that the vast majority (90%) of community pharmacists reported to deliver verbal information as well as being the initiator of the discussion with consumers about prescription medicines. That difference could be explained by our small sample compared to Puspitasari, *et al*., (2009) which included 272 pharmacists, in addition to the difference between the nature of hospital and community pharmacy.

In a paper describing the pharmacy in Jordan, the main duties of pharmacists in Jordan are dispensing and promoting the rational use of drugs (Wazaify, *et al.,* 2009). While hospital pharmacists mainly have administrative duties, such as drug ordering, stock control, and personnel management. Also, in a hospital setting, very limited interaction occurs between the pharmacist and the patient. Most of the hospital pharmacies have dispensing windows where medicines are placed for patients to be picked-up. Moreover an analysis included 168 pharmacists with dedicated critical care responsibilities by LeBlanc, *et al.,* (2007) revealed that 74.4% of respondents attended medical rounds and 54.8% were involved in research. Therapeutic drug monitoring was completed by

72.6% of pharmacists, with the most commonly monitored medications being aminoglycosides and vancomycin. While 41.7% of pharmacists personally dispensed medications, 13% and 8.4% were involved in directly preparing intravenous medications or total parenteral nutrition, respectively.

While over 65% of the participants provided counseling in public areas, only a few (3 cases; 6.4%) counseled their patients in a private area in our recent study. In an Australian study, it was reported that 70% did provide counseling in semi-private areas (i.e., a separate window or room for counseling and discussion with the patient where it is usually shared with one to three patients) while 57 % counseled their patients in private areas. This is likely to be an important factor in limiting pharmacists' interactions with patients and a barrier for the patients to freely ask questions related to their medications or health status (Phokeo, *et al.*, 2004).

Privacy is important when dealing with patients. It supports normal psychological functioning of health-care recipients. Patients have the right to determine when, how and to what extent their health information is shared with others. A feeling of privacy permits patients to trust that information revealed will not be disseminated further and encourages them to communicate honestly and forthrightly. Lack of privacy, an environment in which more information about oneself is available to others than one desires, may seriously hinder communication (Mobach, 2009). Patients may, for instance, be extremely embarrassed about advice to insert a medication rectally or intravaginally or to discuss drug use for a urinary-tract infection or potency problems in front of a curious and listening clientele (Mobach, 2009). Therefore, the World Health Organization (WHO) argues that patients should feel able to express a need and be assured of confidentiality about their illness and treatment when receiving pharmacy services (Wiedenmayer, *et al*., 2006).One study of two community-based pharmacies in

the Netherlands assigned patients to enclosed counters and to queue at distance, or to counters that exposed patients mutually and a closer queue. Patients assigned to counters with reduced sight were more satisfied with the privacy than patients at visually exposed counters. However, in comparison with visually exposed pharmacy counters, conversations of patients at enclosed counters could still be overheard and did not have different conversations than other patients (Mobach, 2009).

In our recent study more than 60% of respondents stated to dispense prescriptions in a range of 100-299 prescriptions per day in each pharmacy. This was a large workload that may limit the time available for patient counseling. In a study conducted by Awad, *et al.,* (2006) on eighty hospital pharmacists working in four general public hospitals in Kuwait. Data was collected via face-to-face structured interviews of the respondents using a pre-tested questionnaire to describe the current pharmacy practice in public hospitals based on self-reported practice. The mean number of prescriptions presented to the pharmacy during the daily working hours of the respondents was reported to be 317, and that of prescriptions dispensed by each pharmacist was 69.5. Fifty two (85.3%) of respondents performed frequent checking of the prescriptions' appropriateness in relation to drug indication, dose, duration of therapy and drug interactions, which was positive finding of the study. Lack of time and patient load were the main reasons for the remaining 14.7% who rarely checked for prescription errors. The rate of frequent patient counseling provision was low, which could adversely affect patient compliance with prescription regimens (Awad, *et al.*, 2006).

Our recent study reported spending almost equal time with patients collecting new and refill (regular) medications (less than 1 minute). This finding has been shown to be unaffected by gender, job description (pharmacist or assistants), setting (inpatient or outpatient), age, experience years, latest educational degree and the place where last

degree obtained. This result was similar to what was found in the observational part; the time spent in interaction and counseling was less than 1 minute. A recent study by Al-Omar, *et al.,* (2011) was conducted on 194 pharmacies using a simulated patient in the UAE. The research intended to cover every accessible pharmacy within the time frame of the study. One of the research team went as simulated patient visiting pharmacies to dispense a prescription. Once the pharmacist delivered all of the medications, the researcher assessed the behavior of the pharmacist using a pre-designed assessment sheet according to ASHP guidelines. The study revealed that, dispensing time in the pharmacy was variable ranging between 2 to 10 minutes. It revealed that time spent with patients was not affected by gender (*p*-value 0.087), slightly affected by nationality (p-value 0.04), and highly affected by age (*p*-value 0.002) leaning towards older pharmacists who spent more time with patients than the younger pharmacists. Moreover, a study conducted by Sleath, *et al.,* (1995) on 12 community pharmacies in New Mexico. A trained observer was sent into the pharmacy at scheduled times on different days of the week for 2- to 4-h shifts to observe the counseling activities of the pharmacy personnel using a pre-validated data form. The observers recorded the following patient and pharmacist-patient interaction characteristics:(1) whether the patient interacted with a pharmacist, (2) the gender, age, and race of the patient and the pharmacist, (3) the type of community pharmacy,(4) the total number of prescriptions the patient received, (5) whether the patient received a new or refill prescription, (6) the number of people waiting nearby to receive their prescriptions, (7) the amount of patient counseling information provided to the patient, and (8) the length of the pharmacist-patient interaction (in seconds). It has been found that the average length of the pharmacist-patient interactions was just less than 2 minutes. Also, they found that the interactions were longer if pharmacists provided more drug information. Another

finding was that the more people waiting nearby, the shorter the length of the pharmacist-patient encounter. And pharmacists are more likely to interact and counsel patients when less people were waiting nearby. They suggested that pharmacists need to be better educated on how to use more of patient-centered approaches such as respect for patients' preferences and values emotional support, physical comfort, information, communication and education, continuity and transition, coordination of care, the involvement of family and friends, which can result in a decreased mortality, decreased emergency department return visits, fewer medication errors, lower infection rates, higher functional status, improved clinical care, and improved liability claims experience. In the care of patients with chronic conditions, studies indicate that patient-centered approaches can improve disease management; increase both patient and doctor satisfaction; increase patient engagement and task orientation; reduce anxiety; and improve quality of life. Patient-centered care can also increase efficiency through fewer diagnostic tests and unnecessary referrals, and reduce hospital attendance rates (The Australian Commission on Safety and Quality in Health Care (ACSQHC), 2001). In line with previous studies, approximately, 40% and 50% of the respondents reported to counsel patients on new and both (new and refill medications) respectively (Pronk, *et al.*, 2002; Puspitasari, *et al.,* 2009). This can be assessed by the pharmacists since the importance of counseling depends on the patients' familiarity with the medication, where patients collecting new medications are assumed to be less knowledgeable than those collecting regular medications (Puspitasari, *et al.,* 2009). A recent study (Gordon, *et al.*, 2007), however, showed that patients taking regular medications do not always understand their medications. Therefore, pharmacy staff should ensure that patients receive appropriate and have better understanding of their medications. As our study

noted, Gordon *et al*. (2007) showed that pharmacists provided counseling more than assistants did.

In term of providing verbal information, a higher proportion of pharmacists than assistants reported to counsel verbally while none of the assistants did. They were almost equal in providing both verbal and written information (n= 15 pharmacists and 13 assistants; $p = 0.062$). A possible explanation for this equality may be that pharmacists tend to be busier in ordering, stocking, preparing and dispensing (Puspitasari, *et al,* 2009). Also in this study, JUH pharmacists were almost equal in number with the assistants (n= 32, 29 respectively). And taking in to account the pharmacists in the administrative setting (which were 5 pharmacists), the total pharmacists in the out- and in- patient pharmacies will be 27.

Differences in the rates of counseling techniques and types of medications were also noted based on the gender of the pharmacists and assistants. More females provided verbal and written information on both new and refill prescriptions compared to males (31 female and 16 male, $p > 0.05$). This difference in the gender may be an artifact of the small males sample compared to females in JUH pharmacies.

Pharmacists carry a very important role in providing patient consultation and work as patient educators. In term of type of information given, over 45% of respondents reported counseling about the indication, dose and route of administration to patients collecting new medications. On the other hand, counseling on refill medications mostly related to the dose and frequency. Similar to findings of Puspitasari *et al.* (2009), this information was more frequently given than information on side effects, precautions, interactions, contraindications, special directions for preparation, storage or administration, expectations of the drug used, techniques for self-monitoring, action if missing a dose and advices on lifestyle modifications. Some pharmacists believed that

information on side effects may frighten some consumers, so, as a result, patients may stop taking their medications (Puspitasari, *et al,* 2009). However, more consumers felt that receiving information about their medications increased their awareness of the importance of taking their medications (Puspitasari, *et al,* 2009). What pharmacists should note, therefore, is how to communicate this information appropriately, by providing balanced information on beneficial effects and side effects (Myers and Calvert, 1984).

Unlike acute illness, chronic illnesses (e.g., asthma, diabetes mellitus, hypertension, etc) are strongly linked to specific behaviors such as smoking, diet, sedentary lifestyle. Therefore, prevention, delaying the progress and effective treatment of these illnesses requires behavioral and lifestyle changes (Palaian, 2006). This study found that 34.0% of participants reported to counsel 25% of patients with new prescriptions about lifestyle modifications; while a 38% said they “never” counsel patients with regular prescriptions on lifestyle modifications. This finding concurs with the observational study conducted by Al-Omar *et al* (2011) where a prescription including antidiabetic and asthma drugs was used by simulated patient to assess community pharmacist’s performance in 194 pharmacies. A performance assessment sheet was used to measure the patient counseling process. Counseling about diet and exercise did not seem to be considered as a part of the pharmacist’s responsibilities; as the vast majority of the pharmacists (96%) didn’t mention anything regarding the lifestyle issue. Also, this finding is similar to a community pharmacists questionnaire study conducted in Kuwait (Awad, *et al*, 2010), where pharmacists indicated less involvement in counseling on personal health- related behaviors such as; taking drugs as prescribed/directed, weight management, knowing drug contents and side effects, diet modification, stress reduction, exercise habits, annual medical examination for preventive, screenings,

tobacco use, alcohol use. The low rate for providing lifestyle modifications is unfortunate, since pharmacists are potentially well suited and in an ideal position to influence the lifestyle practices of patients due to their easy accessibility, knowledge they receive during undergraduate degree and frequent contact with patients (Awad, *et al*, 2010).

Although most studies found that information on directions for use was more frequently delivered, Basheti, *et al* (2005) reported in a telephone survey study conducted on 87 asthmatic patients of 8 community Australian pharmacies that only 8% of patients (n=7)stated that pharmacists had advised them on Turbuhaler use. Pharmacists also rarely verified patients' Turbuhaler technique at any stage. In our study in the JUH, the respiratory pharmacy dispenses different types of inhalers with different techniques. Although, there were devices for teaching patients the appropriate way of use, nobody does use them even for newly prescribed medication. Without checking the appropriate use of medical devices, pharmacists may find it difficult to ensure the effective use of medicines (Basheti, *et al,* 2005).

7.2. Reported barriers by participating pharmacy staff for not providing enough information to patients

The respondents reported that heavy working load, lack of time and lack of staff were the main barriers standing against the implementation of patients' counseling. These 3 barriers are correlated, since the heavy working load can be a cause of lack of time and lack of staff (i.e. resources related barriers).

It is suggested that pharmacists could make more time if there was better delineation between the roles of pharmacist and assistant. If pharmacists were less involved in

dispensing and preparation duties, this would "free-up" time for patient-focused care (Awad, *et al*, 2010).

In a mail survey study by Thomas III, *et al.* (2007) conducted on pharmacists of 327 hospital pharmacy in Illinois, Indiana, and Michigan, respondents identified a shortage of pharmacists and lack of support from physicians and other medical staff as the major perceived barriers to collaborative drug therapy management which included selecting appropriate drug therapies, educating patients, monitoring patients, and continually assessing outcomes of therapy. In our study, lack of physicians support was reported by about 32.0% of the respondents. In order to investigate the relationship between physicians and pharmacists in this regard, a self-administered questionnaire was delivered to 284 physicians selected randomly from 4 main hospitals in northern Jordan. Physicians had been asked about their expectations, experiences, and perceptions of the pharmacists. They did not, regard pharmacists, well suited to provide patient education and do not expect them to provide any clinical services (Tahaineh, *et al*, 2009). In comparison; a study conducted by Zaidan, *et al.* (2011) at Hamad Medical Centre in Qatar, a total of 205 questionnaires were distributed composing of four parts, investigating the physicians' expectations, experiences, and perceptions of the pharmacists. One hundred eighty three physicians (89%) expected the pharmacist to educate patients about safe and appropriate use of drugs, whereas 118 (57%) expected the pharmacist to be available for health-care team consultation during bedside rounds. Moreover, respondents in our recent study reported to have shortage in information regarding medications (19.0%) and communication skills with patients (21.0%). Pharmacists reported to the researcher that they lack knowledge about side effects of some medications and techniques of administering inhalers and insulin for example.

They reported to wish to have courses related to pharmacotherapy and communication skills organized by the University of Jordan.

More than one third of the total respondents (36.0%, n= 14 pharmacists and 3 assistants) found that the option "*counseling is the pharmacists' role and not assistants*" as inapplicable in this regard since they all deal with patients equally and usually assistants dispense medications to patients. This seems to be a low percentage since many regulations (SHPA, 2006; United States Department of Labor, 2009) indicate that the pharmacy assistants should assist the pharmacists in prescription preparation, dispense medications and help with the administrative duties within a pharmacy. Depending on state rules, pharmacy technicians have various responsibilities. Questions regarding prescriptions or drug information are always referred to the pharmacist.

CHAPTER EIGHT

CONCLUSION and RECOMMENDATIONS

8.1. Conclusion

This research investigated the patient counseling practice at a teaching hospital in Amman using two different approaches; the observational and survey methodologies. The main goal of this study was to scrutinize the pharmacists' practice at JUH. However, pharmacy assistants could not be ignored as part of the sample, since they contribute to a significant amount of the workload in the pharmacies at JUH, including contact with patients and their education. In this study, observations showed that pharmacists and pharmacy assistants in the JUH did not provide proper counseling pertaining to patients' drug therapy and well-being. The overall rate of counseling at JUH is low. Pharmacists and assistants appeared to dispense medications without any patient education. However, basic written information is the common practice provided to patients observed in all recruited outpatient pharmacies. This written type of information, in most cases, was noticed not to be comprehensive or following any guidelines and was limited to include the name of medication, dose and frequency in most cases. Rarely, the duration and instructions related to meals were observed to be included.

The second methodology that had been used was a survey methodology using questionnaire to compare between the observed behavior and content of counseling (if any) and the self-perceived behavior and content of counseling from the JUH staff's point of view. The observed behaviors and information has been found to be different from the self-reported staff-answers in the questionnaire. Whilst patient information needs may vary depending on many factors (e.g. age, gender, disease), the pharmacist, as an authoritative source of medicine information, should always assess patients' needs

and offer appropriate medicines information as required. Working load, lack of time and staff were perceived to be the major barriers limiting pharmacies' staff in the JUH from providing counseling and education to patients.

8.2. Implications of the study

- This study is the first of its kind in Jordan to evaluate the performance of pharmacists using observational methodology.
- The study findings shed the light on the gaps in knowledge and skills in both pharmacists and assistants, which are needed to properly counsel patients.
- The study can provide a baseline data to build on in future studies.
- The findings of the study highlight the importance of specialization and enforcing the job description of each of pharmacy staff (i.e. pharmacists and assistants) and separation of their duties in the pharmacy.

8.3. Strength points

- The data collection form and the questionnaire were established after extensive review and of the literature and of other validated instruments.
- In the observational part, the data were recorded during the attendance in each pharmacy visit by a well-trained researcher who is well aware of the data collection form.
- In order to limit the Hawthorne effect, all the pharmacies staff was not aware of the purpose of the study, so there was only minimal tendency to modify their interaction and counseling performance.

8.4. Limitations of the study

- Generalization of the study is limited because the study was conducted at pharmacies and pharmacies staff of the JUH.
- The sample size was relatively small. However, as the first study of its kind in Jordan, and bearing in mind the observational type of the study, it is considered as satisfactory to provide background data at this stage.
- Although every effort was made to minimize the human error during the observational part, yet, the human bias during observation still cannot be ignored.
- The main limitation of the questionnaire part of the study was the possibility of nonequivalence in understanding the questions of the questionnaire among participants, a case which is common when conducting questionnaire based survey. However, in order to minimize this, the researcher encouraged participants all the time to ask for more clarifications when needed.
- Most of the in-completed questionnaires were by pharmacy assistants. That can be a result of that some of the assistants were not fluent in English, which was the language of the questionnaire. This may have affected the results interpretation in away.
- The results of the study are representative of staff JUH. Although researchers believe that pharmacy settings in Jordan are very similar. Yet, the findings may not be representative of the entire hospital pharmacy sector in Jordan.
- The extent of truthful answers or verifying respondents' claims, in the questionnaire part of the study, is not possible in this type of study. Also, this part of the study relied on pharmacist and assistant's self reports, therefore they may have over-reported their counseling behavior to fulfill social expectations. The way to

minimize this by comparison between self-reported behaviors and those noticed in the observational part of the study.

8.5. Future Work

- More research is needed to identify the nature of pharmacist's counseling in other practice setting in Jordan (e.g. inpatient and community pharmacies).
- A larger sample size and different settings of future studies may allow to examine this behavior may vary by characteristics of the pharmacists, the pharmacy site, the patients and their regimen.
- More research is needed to validate the observational part data collection form.
- More qualitative research (e.g. focus groups, interviews) is required in this direction, as it may allow a better understanding of the ways pharmacists do behave, which is essential to ensure the quality of offered pharmacy practice service.
- Faculties of pharmacy in Jordan should focus more on practical training of undergraduate students on proper patient counseling (i.e. behavior, content, how to be the initiator in developing relationship and interaction with patients, and communication skills). This is an important step in order to prepare well trained professional pharmacists, with a developed strategies and counseling techniques.
- Future research could also observe the same patients during multiple visits to the pharmacy to examine whether pharmacist-patient relationships changes over time.

- Future research could video-tape the pharmacist-patient encounters so that the nature of pharmacist-patient relationships could be more detailed.

- Pharmacists should improve their communication skills through continuing education (CE) and Continuous Professional Development (CPD). This can be done in collaboration with the Jordan Pharmaceutical Association (JPA) and faculties of pharmacy. It is recommended to have a non-pharmacist individual involved in health communication training for pharmacists.

- Health authorities in Jordan should work on preparing and enforcing a detailed and clear job description to differentiate between the roles and responsibilities of pharmacists and pharmacy assistants.

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APPENDICIES

Appendix-1

Observational part: Data Collection Form

Name of the study: Provision of Pharmaceutical Care Services at JUH

- **Pharmacy of**: ______________Clinic
- Total No. of pharmacists and Technicians in the same pharmacy: ___________
- Dispensing Staff: □ Pharmacist □ Technician

A. Counseling done by: □ Pharmacist □ Technician

- No. of medications dispensed: ………………..
- Who is being counseled? □ Patient □ Caregiver

Interaction Behaviors	YES	NO
Simply handing over prescriptions and medications		
Counseling for a new prescription		
Counseling for refill prescription		

B. If counseling exists: Who is the initiator?

Pharmacist	
Patient	

C. Counseling includes the following:

	YES	NO
Pharmacist conveying respect, and care to patient		
Counsel about Indication of the drug		
Dose		
Route of administration		
Frequency		
Duration (esp. Antimicrobials)		
Special directions for preparation, storage or administration		
Expectations of the drug used[1]		
common side effects		
Self monitoring of drug therapy		
precautions while using the drug		
Drug- Drug or Food interactions		
What to do if missing a dose		
Explain generic substitutions		
Refills		

1: description of how the patient will know that the medication is working well: changing symptoms, laboratory data improvement

E. The way of providing the information:

Verbal	
Written	
Both	

F. The Time spent in the interaction between pharmacist and the patient:

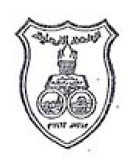
Time	

G. Drugs that has been dispensed:

Notes:

Appendix-2
Ethical Approval

A-ADM01 12



مستشفى الجامعة الأردنية
Jordan University Hospital

Ref. ______________________

Date: ______________________

الرقم: م ج أ/ ٣٣ / ١١٤٤

التاريخ: ٤ / ٢٠١١/٥

الأستاذ الدكتور نائب المدير العام للشؤون الطبية

نائب المدير العام للشؤون الادارية

تحية طيبة وبعد ،،،

ناقشت اللجنة التنفيذية في اجتماعها رقم (٢٠١١/١٥) المنعقدة بتاريخ ٢٠١١/٤/٢٦ اجراء الطالبة نوف العنزي بعنوان : تقييم لأسلوب ومضمون النصح والإرشاد من قبل الصيادلة الأردنيين في مستشفى الجامعة الأردنية وقد تقرر ما يلي:

<u>القرار رقم (٢٠١١/١٣٣)</u>

الموافقة على اجراء البحث المذكورة أعلاه باشراف الدكتورة عبلة البصول.

يُرجى التكرم باجراء اللازم

مـــع التحيـــة ،،،

مديــــر عــام مستشفـــى الجامعــة الأردنيــة

الأستـــاذ الدكتــور مجلـــي محمد محيـــلان

نسخة إلى:

- د.عبلة البصول
- أمين سر اللجنة التنفيذية

ر.س/

تلفون ٥٣٥٣٤٤٤ - فاكس ٥٣٥٣٣٨٨ - صندوق بريد ١٣٠٤١ - عمان - الأردن
Tel: 5353444 Fax 5353388 - P.O.Box 13046 - Amman - Jordan

Appendix-3
The Questionnaire

Section I. About Yourself & the pharmacy:

1. Are you…… □ Pharmacist □ Pharmacist Assistant
2. Gender: □ Male □ Female
3. Age:

   □ 18-24 years □ 25-34 years □ 35-44 years
   □ 45-54 years □ 55-64 years □ Over 65 years
4. What is the highest degree you have obtained? □ Diploma, □ BSc, □ MSc
5. From which country did you obtain your last degree?

   □ Jordan □ Other: Specify:……………………………
6. In which language was your studying? □ English □ Arabic □ Others,…………………...
7. On the average, how many hours per week do you work? …………………………………
8. Experience as a practitioner?
   - o <1 year o 6-10 years
   - o 1-5 years o >10 years
9. Did you work in other places before Jordan Univ. Hospital? (If YES please mention the place)
   - o YES, ………………………………………………………………………
   - o NO
10. In which pharmacy are you working NOW? ………………………….
11. Which setting are you working in?
    - o Out-patient
    - o In-patient
12. Are you currently in: □ Administrative □ Non-administrative position
13. How many prescriptions does the pharmacy you work in dispense on average per day? (please tick **ONE** box only):

    □ Less than 100 □ 100- 299 □ 300 – 499
    □ 500- 699 □ 700- 1000 □ More than 1000

Section 2: Counseling

1. When you dispense medications to patients, do you provide information to patients regarding their medication administration?

 Always Often Sometimes Rarely Never

2. When you dispense medications to patients, do you provide information to patients regarding the modification of lifestyle?

 Always Often Sometimes Rarely Never

3. When you prepare medications to nurses (if inpatient pharmacist), do you provide information regarding their medications administration and storage?

 Always Often Sometimes Rarely Never

4. What types of information do you prefer (in most cases) to provide the patient with:

 Verbal Written Both None

5. During an interaction with your patient, who usually initiates the discussion about medications: (please circle **ONE** word only)

Pharmacist	Always	Often	Sometimes	Rarely	Never
Patient	Always	Often	Sometimes	Rarely	Never

6. Do you usually counsel patients (in most cases) on:

   - New medications
   - Refills
   - Both

7. Where do you normally provide prescription medicine information to patients?
 In a private counseling area
 In a non-private area/ public (e.g. on the dispensing counter)
Semi- private area (e.g. a special counter for counseling)
 It depends on the type of medication, *please mention* ..……….

8. What is the average length of time (in minutes) do you spend in providing verbal medicine information to patients/family? (For each item please tick **ONE** box only)

Type of medicine	No Counseling (0 min)	Less than 1 min	1 – 2 mins	2-5 mins	More than 5 mins
New					
Refill or chronic					

9. In a typical provision of verbal information about prescription medicine(s), how often do you provide the following information to patients or their family? (For each item please tick **ONE** box only)

A. For a **NEW** prescription medicine/s

	100% of prescriptions	**75% of presc.**	**50 % of presc.**	**25 % of presc.**	**Never (0%) of presc.**
In general; do you provide verbal counseling to your patients					
Do you provide written information to patients					
Do you counsel patients about the: indication of the drug					
Dose					
Route of administration.					
Frequency & duration					
Special directions for preparation, storage or administration					
Expectations of the drug used; effectiveness					
Common Side effects					
Techniques for self monitoring of drug therapy					
Special precautions while using the drug e.g. sun exposure					
If there is refill or not					
What to do if they missed a dose					
Explain the availability of generic substitutions					
Advices about life-style modification					

B. For a **Refill or regular** prescription medicine/s:

	100%	**75%**	**50 %**	**25 %**	**Never (0%)**
Do you provide verbal counseling to patients					
Do you provide written information to patients					
Do you counsel about the: indication of the drug					
Do you counsel about the dose					
Route of admin.					
frequency & duration					
Special directions for preparation, storage or administration					
Expectations of the drug used; effectiveness					
Common Side effects					
Techniques for self monitoring of drug therapy					
Special precautions while using the drug e.g. sun exposure					
If there is refill or not					
What to do if they missed a dose					
Explain generic substitutions					
Advices about life-style modification					

10. Please number the following barriers for not giving enough information to patients. From the Highest priority to the lowest:

( ) Lack of time	( ) Lack of physicians' support
( ) Lack of staff	( ) The patient usually knows his/ her medication
( ) Working load	( ) Lack of administrative support
( ) Lack of communication skills	( ) It is the pharmacists' responsibility to counsel patients & not the pharmacists assistants
( ) Lack of your knowledge/ information about medications	( ) Others, *Specify* …………………………………………………………….................. …………………………………………………………………………

Appendix- 4

Questionnaire Covering Letter

استبانـــة لتقيـــيم مستـوى النصح والارشاد المقدم للمرضـى في صيدليات مستشفى الجامعة الاردنية

زميلي الصيدلي/ زميلتي الصيدلانية

تحية طيبــة وبعد

الاستبيان التالي أعد من قبل طالبة الدراسات العليا / صيدلة سريرية لتقييم مستوى النصح والارشاد المقدم للمرضى في العيادات الخارجية في مستشفى الجامعة الاردنية، باعتبار ذلك موضوعا لأطروحتي لنيل درجة الماجستير في الصيدلة من الجامعة الاردنية.

وآمل من خلال تعاوننا معا أن نتوصل بهذه الدراسة إلى التوصيات التي من شأنها ضمان استخدام المرضى الصحيح والآمن للأدوية.

تتكون هذه الاستبانة من جزئين:

الجزء الأول: يحتوي على عدد من البنود الخاصة بالتعريف عن نفسك

الجزء الثاني: يتناول السلوك العام في صرف الأدوية و تقديم الارشادات اللازمة للمرضى

** هذا وسيتم التعامل مع جميع الاجابات بسريـة تامـة ،ولن تستخدم الا لأغراض البحث فقــط

ولكم جزيل الشكـــــر

ملاحظـــــة:
اذا كنت ترغب/ ترغبين في موافاتك بنتائج البحث النهائية، يرجــى كتابة بريدك الالكتروني:

....

Appendix- 5

Examples for some of the dispensed medications' labels used at Jordan University Hospital (JUH) with English translation:

Example # 1: Crestor® (Rosuvastatin)
In the original packet

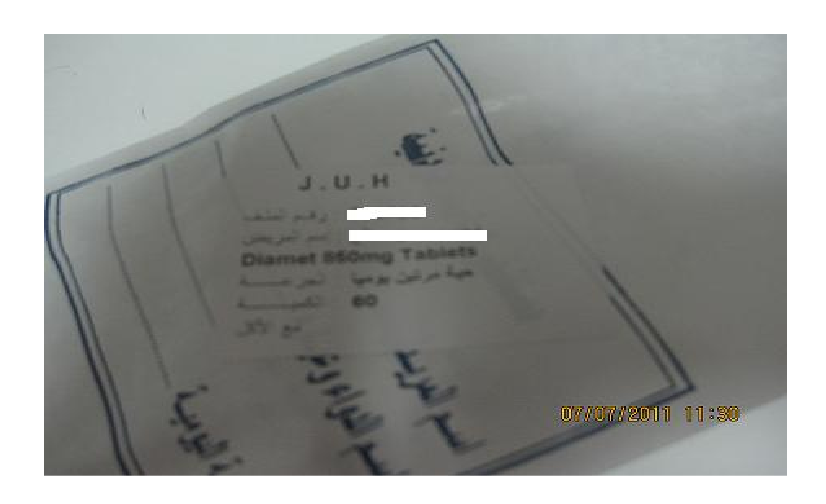


J.U.H.
Patient’s file number
Patient's name
Crestor® 10 mg tablets
Dose: One tablet daily
Quantity: 30 tab
At night

Appendix-5

Example # 2: Diamet® 850 mg (Metformin)

Not in the original packet



J.U.H.
Patient's file number
Patient's name
Diamet® 850 mg tablets
Dose: One tablet twice daily
Quantity: 60
With meals

Appendix-5

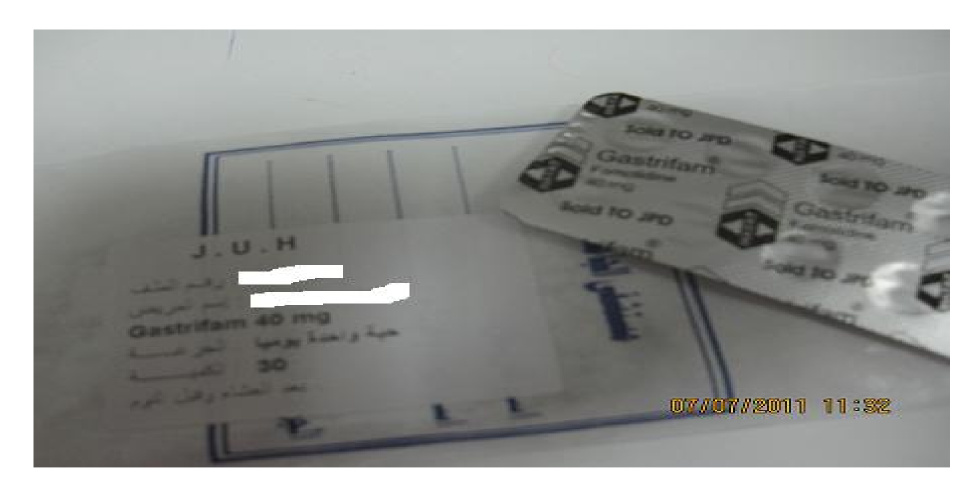
Example # 3: Diapride® (Glimpride) 2mg
In the original container



Patient's file number
Patient's name
Diapride® 2mg tablets
Dose: 2 tablets daily
Quantity: 60
15 minutes before meal

Appendix-5

Example # 4: Gastrifam® (Famotidine) 40 mg
Not in the original container



J.U.H.
Patient's file number
Patient's name
Gastrifam® 40 mg
Dose: One tablet daily
Quantity: 30 tablets
After dinner and before bedtime

Appendix-5

Example # 5: Orfarin® (warfarin) 5 mg
Not in the original container



J.U.H.
Patient’s file number
Patient's name
Orfarin® 5mg tablets
Half a tablet daily
Quantity: 15

Appendix-5

Example # 6: Ferrous Gluconate 200 mg

Not in the original container



J.U.H.
Patient's file number
Patient's name
Ferrous Gluconate 200 mg tablets
Dose: One tablet twice daily
Quantity: 60
One hour after meal

Appendix-5

Example # 7: Folic Acid 5 mg
Not in the original container
A hand-written label



Folix® (Folic Acid) 5mg tablet
One tablet daily

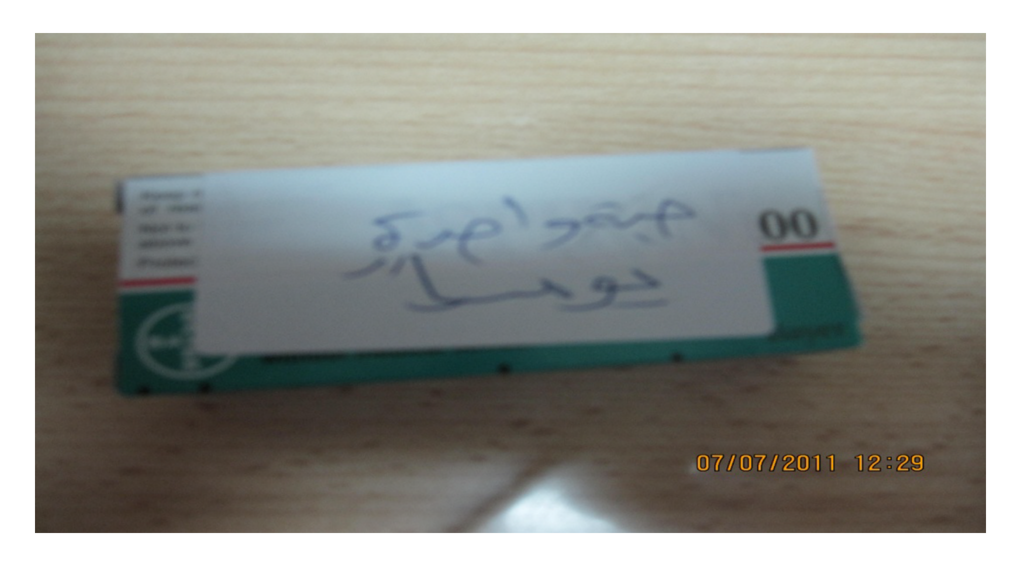
Appendix-5

Example # 8: Aspirin 100 mg tablets

In the original container

A hand-written label

Stuck on the name of the medication



One tablet daily

Example # 9: Mixtard® (insulin) 30 Penfill®
In the original container



J.U.H.
Patient's file number
Patient's name
Mixtard® 30 Penfill (100 units/ 3ml)
Dose: 10 units at morning, 25 units at evening (hand-written)
Quantity: 6

Appendix-5

Example # 10: Clexane® (Enoxaparin) 8000 IU

In the original container

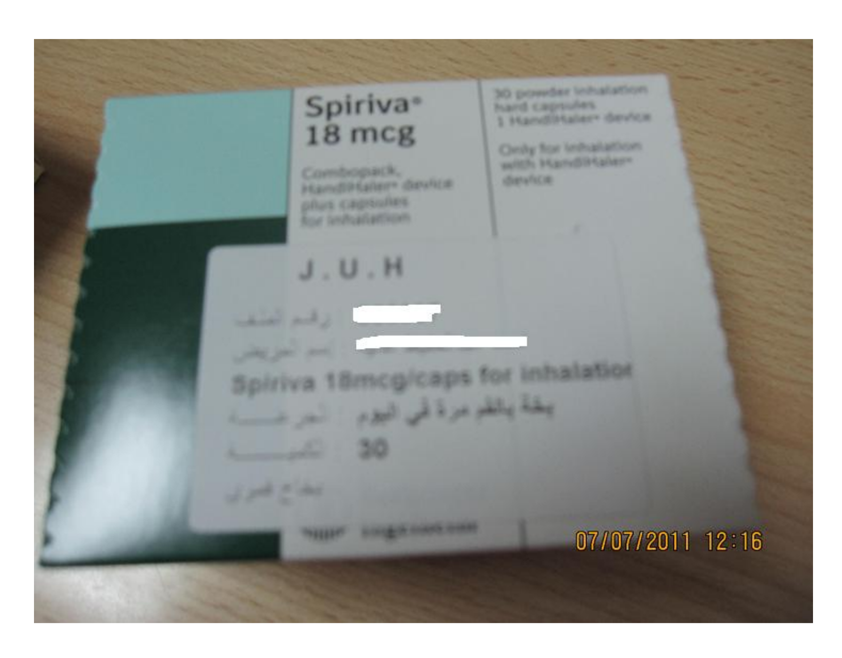
Hand-written label



Injection subcutaneously once a day

Appendix-5

Example # 11: Spiriva® (Tiotropium Bromide) 18 mcg
In the original container



J.U.H.
Patient's file number
Patient's name
Spiriva® 18 mcg/ caps for inhalation
Dose: One puff in mouth once a day
Quantity: 30
Oral inhalation

Appendix-5

Example # 12: Pulmicort® (Budesonide) solution for nebulizer

In the original container



J.U.H.
Patient's file number
Patient's name
Pulmicort® 0.5 mg/ml Neb 2 ml Unit
Dose: Twice daily
Quantity: 60
Nebulizer

Appendix-5

Example # 13: Matador® 500mg (Levofloxacin)
In the original container



J.U.H.
Patient's file number
Patient's name
Matador® 500mg tablets
Dose: One tablet daily (hand-written: for one week)
Quantity: 7
After food

تقييـــم لأسلوب ومضمون النصح والارشاد المقدم للمرضى في صيدليات العيادات الخارجية بمستشفى الجامعة الاردنية

إعداد
نوف عبداللطيف صالح العنزي

المشرف
الدكتورة ميـــادة الوظائفـــي

المشرف المشارك
الدكتورة عبـــلة البصـــول

ملخص

مشكلة البحث

تهدف هذه الدراسة الى وصف وتقييـــم مستوى النصح والارشاد المُقدّم من قِبَل صيدليـــــات العيـــادات الخارجيـــة في مستشفى الجامعـــــة الأردنيـــة.

اعدادات الدراسة

المرحلة الأولى من الدراسة تشمل ٦ صيدليات من صيدليات العيادات الخارجية في مستشفى الجامعة الاردنية وهي كالتالي: صيدلية الغدد الصماء، القلب، التنفسيـــــة، الأطفال، طب الأسرة، والطوارئ. بينما تتضمن المرحلة الثانية من الدراسة من دراسة مسحية على جميع الصيادلة ومساعدي الصيادلة المتواجدين في مستشفى الجامعة الاردنية.

المنهجية

المرحلة الأولـــــى وهو عبارة عن دراسة رصديـــة حيث تمت ملاحظة سلوكيات ومضمون النصح والارشاد (ان وجد) بين ٦٠ تفاعل بين المرضى والصيادلة و مساعدي الصيادلة في صيدليات العيادات الخارجية المذكورة سابقا. بعد انتهاء فترة الدراسة الرصدية ، تم توزيع استبيانات على جميع الصيادلة والمساعدين في مستشفى الجامعة الاردنية لتقييم مدى معرفتهم و رأيهم وتصرفاتهم أثناء تقديم النصح للمرضى بالاضافة لتقديرهم للعواقب المانعة من التواصل مع المرضى حسب أولويتها بالنسبة لهم.

النتائـــج

المرحلة الاولى: ستون تفاعل مابين المرضى والصيادلة (و الفنيين) تمت مراقبتهم, من بينها 70 % كانت تشمل تقديم نصائح وارشادات مكتوبه لكن بدون أيه نصائح شفهيه. فقط 16.7% من الحالات قام الصيادلة (و الفنيين) ببدأ المحادثة مع المرضى. اضافه لما سبق, 70% من التفاعلات قام فيها موظفو الصيدليات بمجرد تسليم أكياس الادوية للمرضى, 21.67% من النصح كانت لعلاجات جديدة بينما 8% لأدوية مكرره. تترتب الارشادات لتشمل التالي من الأكثر للأقل: الجرعه, دواعي الاستخدام, تكرار العلاج, مده الاستعمال، طريقة الاستعمال

(فموي ، حقن، بخاخ ...الخ)، البدائل التجارية، الأعراض الجانبية الشائعـــه، تكرار العلاج ، المراقبه الذاتية لتأثيرات الدواء، الاحتياطات الواجب مراعاتها اثناء استعمال الدواء. أوضحت الدراسة أن متوسط الوقت المستغرق في نصح المرضى (بالثواني) كان يساوي 49.40+/− 34.329. عدد العاملين في الصيدليات أُثبت أن له تأثير على الوقت المستغرق بالنصح والارشاد والتفاعل مع المرضى.

المرحلة الثانية: سبعة وأربعون (83%) من أصل 61 استبيان تم اكماله من قِبل الصيادلة والفنيين العاملين بمستشفى الجامعة الاردنية، تتوزع كالتالي: ثلاثون(94%) صيدلي من أصل 31 و 17 (59%) فني صيدلة من أصل 29. أجاب حوالي 49% منهم انهم يقدمون النصائح للمرضى على الادوية المستخدمة. 75% أدعوا تقديم النصائح الشفهيه للمرضى على الادولة الجديدة المستخدمة لاول مرة بينما 25% على الادوية المكرره. جميع الاجابات على الاستبانات كانت بالايجاب في تقديم النصائح المكتوبة على الادوية المستخدم لأول مرة، بينما 75% للأدوية المكررة. أوضحت الدراسة أنه ليس هناك علاقه مابين الوظيفه (سواء صيدلي أو فني صيدله) و الأسلوب المستخدم في تقديم النصح والارشاد (سواء مكتوب أو شفهي). عشرون صيدلي و 25 فني صيدله أجابوا أن الوقت المستغرق في النصح هو أقل من دقيقة واحده للأدوية الجديدة والمكررة على حد سواء. هذا الوقت ليس له علاقه بالوظيفه، العمر، الجنس ، مكان العمل (صيدلة العيادات الخارجيه أو المرضى المنومين)، سنوات الخبره، المستوى التعليمي، ومكان التخرج. لوحظ أن من أهم العوائق التي تؤثر على التفاعل مع المرضى ومدى نصحهم هي كالتالي: ضغط العمل (53.2%)، قلة الموظفين (34%)، ضيق الوقت (29.8%).

الخاتمـــــة

تبين من خلال الدراسة بشكل عام، أن مستوى سلوك ومضمون النصح والارشاد المقدم من قبل الصيادلة والمساعدين في مستشفى الجامعة الاردنية ليس بالمستوى المطلوب. و تعتبر المعلومات المكتوبة هي السائدة في تواصلهم مع المرضى. لذلك يجب العمل على تطوير مهارات الاتصال وأسلوب تقديم النصح من خلال الدورات التدريبية والبرامج التعليمية. ويعتبر كلٌ من ضغط العمل، وقله العاملين وضيق الوقت من أبرز العوائق في تقديم النصح المثالي برأي غالبية الصيادلة والفنيين.